

Philippine Abstracts



A quarterly classified summary of the latest Philippine publications in the field of science and its applications (UDC 5 and 6)

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PHILIPPINE ABSTRACTS

A quarterly classified summary of the latest Philippine publications in the field of science and its applications (UDC 5 and 6)

Volume 13, Nos. 3-4

July-December 1972

MATHEMATICS

517.562:622.2

Curve fitting. Mining geology.

147. Application of bilogarithmic curve-fitting method in the interpretation of the ground magnetic work in Northwestern Marinduque. Manila, 1971. 19p. graphs, illus. Mimeographed. (Paper presented at the 3rd Symposium of Mineral Resources Development and the 18th Mine Safety Conference, Nov. 29-30, 1971, Manila)

Ground magnetic work was done in scattered areas using 3 vertical type magnetometers. Interpretation of the significant anomalies was carried out by the bilogarithmic curve-fitting method. The resulting fit provided information on the depth to the top causative body, horizontal positions, "magnetic width" and geologic dip. The interpretation indicated that of the 9 significant anomalies selected, 7 are caused by plate-shaped magnetic bodies buried at depths in the order of 15 m and the other 2 are caused by horizontal, cylinder-shaped bodies buried at depths in the order of 40 m.

519.3

Statistical methods.

148. The coefficient of variation in interval estimation. Pilar L. Ferrer (Statistical Center, University of the Philippines, Manila). *Philippine Statistician*, Jan.-June 1971, v.20, nos.1-2, p.34-49. tables. 9 refs.

A study on the use of the coefficient of variation in obtaining confidence intervals in a single-variable problem is presented. Results showed that with simple and stratified random sampling the values of the sample and stratum sizes, and their confidence limits are proportional to the values of the corresponding coefficient of variation. In Charnes and Lemke's method which was used to get a compromise allocation in a multipurpose survey, the stratum sample size was found to meet the required precision.

519.5

Statistical methods.

149. On stratification using the Lorenz curve. Ernesto R. Ramos (Statistical Center, University

of the Philippines, Manila). *Philippine Statistician*, Jan.-June 1971, v.20, nos.1-2, p.15-33. graph, tables. 10 refs.

Studies on the possible use of the Lorenz curve in the determination of strata boundaries showed the limitation of the equipartition method to moderately skewed distributions. However, adjustment for skewness and end corrections brought about an improved Lorenz curve stratification applicable even for highly skewed distributions. The improved Lorenz curve stratification was found as efficient as the optimum stratification method under Neyman allocation.

PHYSICS

535.37:546.34'273

Luminescence and luminescent materials. Lithium.

150. Properties of lithium borate (Mn-activated) thermoluminescent dosimeter. Jose R. Panam (Philippine Atomic Research Center, Quezon City). Manila, Philippine Atomic Energy Commission, Sept. 1971. 15p. graphs, tables. 5 refs. [PAEC(D) 718]

The lithium borate phosphor in the particle size ranging from 105 to 210 μ showed a high relative sensitivity. The sensitivity of the phosphor increased with increasing concentration of Mn, indicating that lithium borate (Mn-activated) is as good as any phosphor used in dosimetry. The thermoluminescence output of phosphor was found linear with exposure up to about 200 R, above which it was supralinear at about 250 R. The minimum measurable dose was 100 mR \pm 10 mR.

CHEMISTRY

543.6:546.282

Rocks - Analysis. Silica - Analysis.

151. Chemical determination of free silica. Maria Luz M. Bihis and Beatriz L. Trinidad (Bureau of Mines, Manila). Manila, Bureau of Mines, June 1971. 9p. tables. (Report of investigation no. 71)

The procedure used is adapted from methods developed by A. E. Rodionova, A. G. Kobilev and

P. P. Ovcharenko, and J. Calleja and B. Bacle. It is applicable to silicate rocks but not to rocks with high chrome and magnetite contents. Results obtained from the metamorphic rocks from Caramoan (Camarines Sur) showed that among the fine grained greenschists, the visually estimated values were often lower than those that were chemically determined and generally fell within close range for the coarser grained samples.

546.18:546.02

Phosphorus - Isotopes.

152. A new technique for separating Phosphorus-32 from neutron-irradiated sulfur. D. B. Domondon and F. T. Ocon (Philippine Atomic Research Center, Quezon City). *Nucleus*, June 1971, v.9, no.2, p.7-9. graphs, illus.

Sulfur is melted and passed through a layer of magnesia which quantitatively absorbs the P-32. The magnesia is dissolved in HCl and subsequently removed in a cation exchanger. The effluent containing the P-32 is evaporated to dryness, treated with H₂O₂ and P-32 taken up with pyrogen-free water.

The purity of the product is determined by gamma spectrometry, beta absorption in aluminum, paper chromatography and precipitation tests. The product is found to be free from any gamma and soft beta-emitting contaminants; Al, Mg and heavy metals are not detected. More than 99% of the P-32 is in the orthophosphate form.

546.41:546.02:539.165(043)

Calcium - Isotopes.

153. Preparation of Calcium-45 by the recoil process. Fred Cheng. Manila, Graduate School, Adamson University, June 1971. 3l. 54p. 3l. graphs, tables, diagr. 3l refs. (Thesis. M. S. in Chemistry)

The production of Ca-45 from irradiated calcium oxinate and calcium citrate by the recoil process was investigated. Spectrophotometric determination of the recoil Ca content indicated a good recovery from calcium citrate irradiated for 5 hrs and a high, nearly constant enrichment factor. 10-hr irradiation decreased the enrichment factor and increased Ca recovery. Decay and absorption curves and the gamma spectrum of Ca-45 obtained showed that it is of acceptable purity.

GEOLOGY . METEOROLOGY

550.341.2(914)

Earthquakes - Philippines.

154. Aftershocks analyses of the recent major Luzon earthquakes based on the records of Taal volcano station. A. C. Troncales. *COMVOL Letter*, Sept.-Dec. 1971, v.5, nos.5-6, p.1-8. graphs, maps, diagr. 1 ref.

Based on the analyses of the seismograms recorded in the Taal Observatory during the Aug. 1968 and April 1970 Luzon earthquakes, the following were deduced: 1) the linear increase of hypocentral distance with time relative from a fixed observing station is proportional to the rate of decrease in volume of aftershocks; 2) the density of occurrence of aftershocks within a designated time domain is proportional to the magnitude of the corresponding main shock; 3) the average linear distribution of hypocentral distance with time of aftershocks shows a positive gradient, and negative for foreshocks; and 4) the frequency of aftershocks

is made with respect to hypocentral locations from a given fixed station and an anomalous maximum peak occurs outside and away from the position of the main shock, suggesting that the anomalous high peak could have been due to integration of some foreshocks of another major quake.

551.509

Weather forecasting.

155. Preliminary report on the skill of some objective techniques for forecasting typhoon movement. I. Subbaramayya and L. Amadore. Quezon City, Weather Bureau, June 1971. 32p. graphs, tables, illus. 13 refs. (Technical series no. 10)

The accuracies of the following techniques, namely Climatology, Persistence, $(P + C)/2$, Miller-Moore, Wang, Arakawa and Tse, were compared based on the 46 forecasts made in July-Nov. 1969 in the western North Pacific. The Arakawa and Miller-Moore techniques gave the best forecasts followed by the Persistence technique. However, some changes in the values of the constants in the regression equations are proposed. Recasting of the Tse's technique is also suggested.

551.515(914)

Meteorology.

156. Cyclonicity in the Philippines. I. Subbaramayya. Quezon City, Weather Bureau, Aug.

1971. 20p. charts. 5 refs. (Technical series no. 12)

A total of 131 cyclonic systems (depressions/storms/typhoons) recorded in 1969-1970 were studied. The annual cyclonicity was found maximum in the extreme north and was about 4 days per lat-long square and gradually decreased to practically nil in the extreme south. About 18% of the annual rainfall in the extreme north was due to cyclonic activity which reduced to nil in the extreme south-western Mindanao. The zone of maximum cyclonicity rapidly moved northward in May and gradually shifted to lower latitudes in Oct.-Nov. This is similar to the rapid advance and slow withdrawal of the southwest monsoon in India. The slight southward shift of the cyclone activity in the mid-Aug. period was connected with the unique epoch in monsoon climatology which is to be further investigated and confirmed.

The information in the charts presented may be useful in planning agricultural and other development programs.

551.573:631.67

Evaporation - Methodology.

157. A correlation study of the piche evaporimeter and the class A evaporation pan. Evangelina J. Vilorio and Rodolfo C. Undan. *CLSU Scientific Journal*, July-Dec. 1971, v.7, no.2, p.162-177. graphs, tables. 10 refs.

Data taken from CLSU Evaporation Station (Nueva Ecija) and Bustos Evaporation Station (Bulacan) were used in the study. Results revealed that from the CLSU data, the correlation coefficients for the piche evaporimeter vs the open pan and the piche evaporimeter vs the shaded pan are 0.851 and 0.823, respectively. From the Bustos Evaporation Station, the correlation coefficients for the piche evaporimeter vs the open pan and the piche evaporimeter vs the shaded pan are 0.805 and 0.727, respectively. A positive correlation was observed in the piche evaporimeter and the class A evaporation pan for both stations.

552.4.051.43

Geology - Structural.

158. On the Palawan trend. Matzumu Motegi. *Mineral Engineering Magazine*, Sept.-Oct. 1971, v.23, no.1, p.30-35, 44. maps. 4 refs.

Studies on the NE structural trend represented by the distinct topography of Palawan Island are reported. The schist found in the area of the trend is not necessarily parallel to the Philippine Faults. The Palawan trend is in-

ferred to be ancient lineament related to the metamorphism that produced the schist. The distribution of the metallic deposits, especially Cu, appears to be controlled by the trend, regardless of the type and age of ore deposits, so that the concentration and/or mechanism of concentration of the heavy metals in the basement rocks appears to have a definite relation to the Palawan trend.

BOTANY

581.13.04:633.18

Botany - Physiology.

159. Morphological and physiological responses of crops and weeds to Trifluralin. VI. Free amino acid content of the rice seedling. Bonifacio E. Lapade and Beatriz L. Mercado (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, Oct.-Nov. 1971, v.55, nos.5-6, p.239-246. tables. 13 refs.

Rice seedlings at different stages of development were treated with Trifluralin for varied length of time. The amino acid contents of the shoot and one-cm root tip were analyzed quantitatively by thin layer chromatography and spectrophotometry. The chromatogram of the extracts from the treated seedlings revealed either a decrease or absence of aspartate and glutamate; increase of arginine, asparagine and glutamine; and decrease of leucine, alanine, glycine, methionine, phenylalanine, valine, serine and histidine. 3-day-old seedlings showed alterations in amino acid content as early as 6 hrs after treatment. It is postulated that Trifluralin causes a shift in the metabolism of glutamate and aspartate towards the formation of arginine, glutamine and asparagine.

581.13.04:633.15

Botany - Physiology.

160. Morphological and physiological responses of crops and weeds to Trifluralin. VII. Influence on peroxidase activity. G. B. Begonia, B. L. Mercado and R. P. Robles. *Philippine Agriculturist*, Oct.-Nov. 1971, v.55, nos.5-6, p.247-252. tables. 12 refs.

Peroxidase activity in the roots and shoots of UPCA var. corn seedlings treated with Trifluralin was determined colorimetrically. Extracts from treated seedlings gave high activities. *In vitro* tests on the effect of Trifluralin on corn peroxidase and horseradish peroxidase showed a similar increase, although of a

lower magnitude. Corn root peroxidase was more responsive to Trifluralin than that from the shoot. This difference was attributed to greater accessibility of the herbicide to the root.
Authors' Abstract

581.526.325.3
Plankton.

161. A preliminary investigation of the zooplankton in the Hilutangan Channel, Cebu. James Miller. *Philippine Scientist*, ser. F, 1971, v.8, p.33-38. map, tables. 6 refs.

Samples collected through plankton net were placed in jars with formalin and borax using a plankton-dividing device and examined under an X30 binocular microscope. Copepods were found to be the most dominant. Chaetognaths, Appendicularia and siphonophores were also prominent. Invertebrate eggs were common but only a small percentage of fish eggs were noted. Tests showed no significant differences between the compositions at different depths.

582.28:581.14 582.752.3:632.4
Wood destroying fungi.

162. Physiology of *Lenzites striata* (Swartz ex Fries) Fries and its effect on the toughness of santol [*Sandoricum koetjape* (Burm. F.). Merr.]. Consorcia C. Banatin. *Wood Preservation Report* (Forest Products Research & Industries Development Commission, College, Laguna), July-Aug. 1971, v.6, no.4, p.7-10. tables. 10 refs.

The study using santol as the substrate and *Lenzites striata* (Swartz ex Fries) Fries as the test organism showed that the optimum temperature for the growth of *L. striata* was 32°C, at a minimum moisture content of 28.19% (based on oven-dry weight) and an optimum pH of 5.5-6.5. *L. striata* was found more tolerant to NaF and CuSO₄, but very sensitive to Dowicide G, Super Noxtane, Na₃AsO₄·12H₂O, HgCl₂, and Tanalith C. The negative reaction of the fungus to both gallic and tannic acid agar media indicated that the fungus is a brown rotter. Under laboratory conditions, the reduction in toughness of santol was 22.3%. The wood-decaying capacity of *L. striata* was found to be lower than those of *Fomes lividus* and *Polyporus sanguineus*.

582.59(043):581.09
Orchid culture.

163. Banana homogenate, coconut water, peptone and auxins as nutrient supplements in the in vitro culture of *Dendrobium* and *Phalaenopsis* ovules. Paulina D. Pages. College, Laguna, Graduate Faculty of the College of Agriculture, University of the Philippines, May 1971. 101p. tables, illus. 33 refs. (Thesis. Doctor of Philosophy)

Results of the study showed that the best supplements for *Phalaenopsis* ovule culture were the coconut water-naphthalene acetic acid (NAA) and coconut water-peptone combinations. 20% coconut water with 0.5 ppm NAA, 10% coconut water with one ppm NAA and 20% coconut water with 6 g/liter proteose-peptone produced the best plantlets.

For young *Dendrobium* protocorms reflasked at 60-80 days after flasking, banana homogenate (150 g/liter) with 6 g/liter proteose-peptone and with 20% coconut water and 0.8 ppm NAA gave the best plantlets. 6% sucrose with one ppm NAA without nutrient supplements stimulated shoot height and number of leaves, and produced desirable plantlets. Older *Dendrobium* ovule cultures responded best to banana homogenate with 10 ppm indole butyric acid. 6% sucrose in basal Knudson C medium without nutrient supplements enhanced growth and development although effects were slower. *Dendrobium* ovules germinated best on Knudson C medium with banana homogenate and 0.5-one ppm NAA while *Phalaenopsis* ovules, on Knudson C medium with 3 g/liter proteose-peptone.

ZOOLOGY

593.9:591.5(043)
Starfishes.

164. Starfishes of Silut Bay: Ecological and systematic studies. Airlin S. Espina. Cebu City, Graduate School, University of San Carlos, June 1971. 9l. 73p. plates, tables, illus. 30 refs. (Thesis. Master of Science, Major in Biology)

Taxonomic descriptions of 10 species belonging to 9 genera are given. Of the species, only *Oreaster nodosus* (Linnaeus) and *Archaster typicus* Mueller and Troschel were studied. The distribution of *O. nodosus* was 0-92 individuals and *A. typicus*, 0-297, in the different quadrats during a 5-mo. observation. Variations in air, soil, temp., pH, salinity and oxygen content are well tolerated by both species and did not seem to affect their distribution.

595.77:591.5
Mosquitoes.

165. Mosquitoes in Cebu City and adjacent areas; an ecological survey. Enrique Schoenig. *Philippine Scientist*, ser. F, 1971, v.8, p.21-32. tables. 11 refs.

The survey was carried out from Jan. through Dec. 1968. Its objective was to determine the number of mosquito species existing in the Cebu City area, their relative abundance and seasonal variation, their bionomics and their medical importance.

Of the 120,000 specimens handled, 72 species were identified; 12-15 were found to be disease-carrying; and the rest, of doubtful identity. The relative strengths of individual harmful groups were: *Aedes* (H-fever, dengue fever, filariasis) - 40%; *Culex* (viral diseases, filariasis) - 30%; *Anopheles* (some malaria carriers) - 15%; others (most of them not harmful) - 15%. Concentration of dangerous species according to climate, species of major medical importance and characteristics of each species are given.

595.78(914)
Butterflies.

166. Four new Philippine danaids. Julian N. Jumalon. *Philippine Scientist*, ser. F, 1971, v.8, p.11-19. plates. 5 refs.

Presented is the brief description of the following danaids which were caught in the high altitude mountains and swampy area, namely: *Danaus melaneus schoenigi* subsp. nov., *Euploea sibulanensis* sp. nov., *Ideopsis bracara canlaonii* subsp. nov. and *Euploea althaea rigneyi* subsp. nov.

598.91(914)
Eagles.

167. The present status of conservation of the monkey-eating eagle of the Philippines. Dioscoro S. Rabor. *Philippine Geographical Journal*, July-Sept. 1971, v.15, no.3, p.90-103. map.

The data presented on the conservation of monkey-eating eagle (*Pithecopaga jefferyi* Ogilvie-Grant) were collected in the course of various zoological explorations and field collections in 1956-1970. It was observed that the monkey-eating eagle has been extinct in Samar and Leyte since 1930, and in Albay, Camarines Sur and Sorsogon since 1961. A few pairs were found in forested regions of Cagayan, Nueva Vizcaya, Isabela and Quezon Provinces. The large remnant population of the species was ob-

served in Mindanao Island.

599.742.1:591.11(043)
Blood - Coagulation - Dogs. Transamin.

168. A preliminary study on the efficacy of Transamin as a systemic blood coagulant in dogs. Angel A. Galang, Jr. Quezon City, College of Veterinary Medicine, University of the Philippines, Aug. 1971. 1st. 30p. tables. 44 refs. (Thesis. Doctor of Veterinary Medicine)

Experiments conducted on 20 apparently healthy dogs showed that Transamin effected statistically significant decrease in bleeding time. In actual surgical and clinical cases, 25 mg/kg body weight Transamin markedly checked bleeding during operation and post-surgical management.

599.82:591.11(914)
Monkeys - Physiology.

169. A study of the normal red blood cell and white blood cell counts of Philippine monkeys. Salvador H. Escudero, III and Gregorio C. Aquino. *Philippine Journal of Veterinary Medicine*, June 1971, v.10, no.1, p.7-11. tables. 6 refs.

The study was conducted on 24 male and female apparently healthy monkeys (*Macaca philippinensis*) aged 8 mo. - 2 yrs. The normal RBC count ranged from 5.04 to 9.81 million/cu. mm and WBC count ranged from 10.1 to 17.6 million/cu. mm. In general, the males showed higher mean RBC and WBC counts than the females, but the difference was statistically insignificant.

MEDICAL SCIENCES

PHYSIOLOGY

612.015:613.71
Body fluids. Electrolytes.

170. Fluid and electrolyte losses incurred during physical activity. Alberto G. Romualdez, Jr. and Augustus C. Damian, Jr. (College of Medicine, University of the Philippines, Manila). *Acta Medica Philippina*, ser. 2, April-June 1971, v.7, no.4, p.138-139. tables. 3 refs.

Measurements of fluid and electrolyte losses during soccer matches were made on 30 healthy male athletes. Results showed that serum Na concentration increased, while serum K did not change significantly. Sweat Na concentration was significantly lower than the serum value, while sweat K was significantly higher.

612.12:616-053.1(=914)
Bilirubin - Blood.

171. Microdetermination of serum bilirubin among Filipinos at birth and in infancy. F. E. Anzaldo, A. M. Garcia and E. T. Bersalona. *Philippine Journal of Pediatrics*, Aug. 1971, v.20, no.4, p.146-151. tables. 6 refs.

Results of the study showed that the mean values obtained among 95 normal male and female newborns and infants (aged 3 days to 6 mo.) were similar to established values obtained by macromethods. From 7 to 17 days old, the mean total bilirubin was 2 mg% which declined to less than one mg% from the age of one mo. The values obtained in this study can be used as standards among normal Filipinos in the same age group.

612.12:616-053.1/.2(=914)
Serum albumins. Serum globulins.

172. Electrophoretic analysis of serum protein fractions of Filipino newborns and infants. Felicidad E. Anzaldo, Rogelio N. Relova and Josefina J. Cayetano. *Philippine Journal of Pediatrics*, June 1971, v.20, no.3, p.93-101. tables. 18 refs.

Paper electrophoresis was done on serum samples obtained from 103 apparently normal infants of both sexes, aged one day-6 mo. old. Mean values for albumin, and alpha 1, alpha 2, beta and gamma globulins were found similar to standard pediatric values. No significant change in the 5 serum protein levels was noted indicating a fairly constant level from birth to 6 mo. These results could be used in establishing standards for Filipino infants.

612.17:578.084
Heart - Innervation.
Electrophysiology.

173. Electrophysiologic studies of some viscerocardiac reflexes. Zenaida G. Bagabaldo (College of Medicine, University of the Philippines, Manila). *Acta Medica Philippina*, ser. 2, April-June 1971, v.7, no.4, p.117-123. graphs, tables. 20 refs.

The effects on the rate and pattern of firing of afferent cardiovascular vagal fibers were studied during manipulation of the stomach, duodenum, urinary bladder, common bile duct and gall bladder of unselected cats weighing one-3 kg. Marked changes in the rate and pattern of firing of the nerve fibers, without significant changes in cardiac rate were observed suggesting that the heart nerves are more sensi-

tive gauges of physiologic activity compared to ECG. Heart activity was found to be affected by the stimulation of the different visceral organs, which explains that pathologic conditions in the abdominal organ may be accompanied by chest pain or cardiac discomfort and hence, be wrongly diagnosed as heart disease.

612.65(=914)
Growth.

174. Recommended height and weight standards for Filipinos. J. Bulatao-Jayme, Dionisia de la Paz and Carlita C. Gervasio (National Institute of Science & Technology, Manila). *Philippine Journal of Nutrition*, July-Sept. 1971, v.24, no.3, p.161-177. graphs, tables. 11 refs.

A height-weight table for Filipinos aged one-18 yrs is presented. The data from high-income level Filipinos suggested the use of the 90th percentile levels for Filipino height and weight as reference standard in assessing the nutritional status and growth of Filipino children. This was supported by the application of nutritional indices given by Dugdale and by Rao and Singh. Although the data fall within the optimum suggested by these indices, standards tend to fall on the undernourished side despite the already high percentile levels.

612.66:616-053.2(=914)
Anthropometry. Nutrition.

175. Studies on some anthropometric and biochemical measurements as parameters of nutrition in Filipino children. Domiciana F. Dauis-Lawas, Ireneo Lawas, Rodito Boquiren, Arturo Librea, Pura Flor Isleta and Lourdes Miranda. *Philippine Journal of Pediatrics*, Sept.-Oct. 1971, v.20, no.5, p.179-202. graphs, tables. 47 refs.

Anthropometric and biochemical measurements were made on 779 children, aged 0-15 yrs. Results showed that skinfold thicknesses in both males and females vary significantly with age. The mean values for all ages among boys were smaller than the corresponding mean values among girls. Mid-arm circumference for both sexes was greater in the older children. The mean values for mid-arm muscle circumference for boys were higher than those for girls, thus boys are more muscular than girls. The urea nitrogen/creatinine ratio (UN/C) showed a definite regression with age. The UN/C ratio for both sexes was found lower than the suggested lower limits of normal by Worth. Thus, the study indicates that Filipino diets are qualitatively and quantitatively poor.

612.79:616-093

Skin - Microbiology.

176. Skin flora of the newborn. Epifania Santiago-Fernandez, Emma Lim-Tan and Perla Lim-Tan. *Philippine Journal of Pediatrics*, Sept.-Oct. 1971, v.20, no.5, p.203-209. graphs, tables. 3 refs.

The bacterial flora of the skin of 22 babies at birth and after use of PhisoHex bath up to the first 3 days of life was investigated. Although the skin of babies delivered by Cesarean section was sterile, the skin of babies of normal delivery was colonized early mainly by non-pathogenic coagulase negative *Staphylococci* in the eye and nose. Colonization appeared to start promptly on the first day with coagulase negative *Staphylococci* and Gram-negative *Proteus* and *E. coli*; alpha *Streptococcus* was present occasionally. No apparent relationship between the flora of the birth canal and the newborn skin was noted.

PUBLIC HEALTH

614.253

Child welfare.

177. Battered child syndrome in a Filipino infant - a case with multiple skeletal injuries. Hilario S. Esguerra, III, Rodulfo A. Sarmiento and Fernando L. Capulong (Institute of Medicine, Far Eastern University, Manila). *Journal of the Philippine Medical Association*, June 1971, v.47, no.6, p.287-294. illus. 24 refs.

The case seen in an 11-mo.-old boy presented multiple skeletal deformities, severe anemia, malnutrition and numerous scars. It is advised that such cases be reported to the Protective Services of the Bureau of Child and Youth Welfare of the Social Welfare Administration (Manila).

PHARMACOLOGY

615.71

Propranolol - Pharmacodynamics.

178. Effects of Propranolol on the ischemic T wave inversion after exercise in apparently healthy subjects: A preliminary report. Santiago V. Guzman (College of Medicine, University of the Philippines, Manila). *Acta Medica Philippina*, ser. 2, April-June 1971, v.7, no.4, p.133-137. graphs. 12 refs.

Studies showed that Propranolol completely

blocked the exercise-induced ST segment in 12 apparently healthy subjects (21-35 yrs) with horizontal ST segment depression of less than 0.5 mm. In 12 patients with coronary heart disease, the ischemic ST depression was not abolished. It is suggested that the "Propranolol test" may be a way of differentiating non-specific T inversion from ischemic heart disease. Based on the known action of Propranolol as a beta-blocker, it would seem that the frequently observed non-specific T changes seen in young subjects are sympathetic nerve effects.

615.78:616-009 615.78:616.1

Emotions - Drug effects. Cardiovascular system - Drug effects.

179. A double-blind study of RO 5-4556 in cardiovascular disorders. M. Martires and F. Dial. *Filipino Family Physician*, July-Sept. 1971, v.9, no.3, p.53-55.

The effects of Nobrium were studied in 23 patients, aged 15-65 yrs, with complaints of plain nervousness and cardiovascular disorders as chest pains and palpitations. 20 of the cases were benefited by the drug and only 3 failed to respond favorably. Nobrium was found safe and effective in blocking the disturbing effects of limbic system dysfunction on the autonomic nervous system. At relatively small doses, it was equally effective in males and females in alleviating psychosomatic symptoms with minimal side effects. The drug is believed to be non-habit forming.

615.78:616-009 616-009:615.78

Psychophysiologic disorders - Drug therapy.

180. A double-blind trial of Nobrium in psychophysiologic and other disorders. Nina V. Vicente and Emmanuel T. Gatchalian (Dept. of Medicine, University of Santo Tomas, Manila). *Filipino Family Physician*, July-Sept. 1971, v.9, no.3, p.51-52.

The study was conducted on 60 male and female patients (13-82 yrs old) suffering from anxiety and tension of varying causes and severity. The duration of symptoms ranged from 2 days to 13 yrs. Results showed that Nobrium proved more effective than Placebo in 82.14% of the cases in relieving the patients of the symptoms. Side effects noted were minimal (10.17%) and reversible.

615.78:616-009(=914) 616-009:615.78(=914)
Emotions - Drug effects.

181. Clinical experience with RO 5-4556 (Nobrium) in a double blind study among Filipino patients. Leonida D. Mariano (National Mental Hospital, Mandaluyong, Rizal). *Filipino Family Physician*, July-Sept. 1971, v.9, no.3, p.47-50. 2 refs.

The effectiveness of Nobrium was evaluated in 60 patients (13-78 yrs old) with emotional disorder. About 87% of the psychoneurotics and 36% of the psychotics improved with 10 mg Nobrium, while only 77% of the psychoneurotics and 24% of psychotics improved with Placebo. Improvement was manifested by disappearance or alleviation of anxiety, tension, irritability and body complaints. The side reactions observed were headache, dizziness, nausea, vomiting and prolonged menstruation. However, there were no untoward effects on blood, urine and blood pressure.

615.78:616.853 616.853:615.78
Diazepam - Pharmacodynamics. Epilepsy.

182. Uses of diazepam in epilepsy. Co Bun Tee, Jr. and Gregorio Pineda (UST Hospital, Manila). *Philippine Journal of Pediatrics*, Aug. 1971, v.20, no.4, p.138-145. graphs, tables. 17 refs.

The effects of intravenous diazepam (Valium) were evaluated in 13 Filipino newborns and children with status epilepticus. Clinical response was dramatic in all cases except one, as shown by cessation of seizure within 30-60 sec at a maximal dose of 0.40 mg/kg body weight. The drug had no side effects except respiratory distress observed in one patient. The anticonvulsant effect was found independent of the cause of seizure as in those due to acute cerebral dysfunction, idiopathic epilepsy or slowly progressive CNS diseases. The drug seemed to be ineffective in metabolic encephalopathy due to electrolyte imbalance. In patients with infantile spasm, the EEG recording should include the diazepam infusion test to determine its effect on the dysrhythmia and prognosticate its effectiveness in stopping clinical attacks.

DISEASES . PATHOLOGY

616.12-085
Coronary disease - Drug therapy.

183. Pyridinolcarbamate in the treatment of ischemic heart disease: A double blind study. Santiago V. Guzman (College of Medicine, Univer-

sity of the Philippines, Manila). *Acta Medica Philippina*, ser. 2, April-June 1971, v.7, no.4, p.129-132. graphs, tables. 9 refs.

Observations were made on 34 patients with electrocardiographic evidence of ischemic heart disease given 1500 mg Pyridinolcarbamate in 3 divided doses. Based on their physical work capacity, nitroglycerine requirement and electrocardiogram, all cases showed statistically significant favorable response to the therapy. The drug produced no vasodilating action and no serious side effect was noted, except in 2 cases with vague epigastric pains and nausea. The beneficial effects observed may be due to the anti-atherosclerotic action resulting in the expansion of the arterial lumen.

616.15:616.995.1-053.2(=914)
Hookworm infection - Blood.
Folic acid deficiency.

184. Serum and red cell folate activity in Filipino school children with hookworm anemia. Victor O. Tantengco, Carmencita B. Salvosa, Corazon R. de Castro and Fe Pantas. *Journal of the Philippine Medical Association*, July 1971, v.47, no.7, p.350-364. graphs, tables, illus. 20 refs.

Observations made on 146 cases of hookworm infection revealed that 37% had hemoglobin levels ranging from 4.4 to 11.6 g%. Most of the cases showed microcytosis, hypochromia and anisocytosis in their blood smears. 27% of the anemic children gave serum folate levels of 1.8-2.9 mg/ml. Serum and red cell folate levels suggestive of folic acid deficiency occurred in 30% and 40%, respectively. The results suggest that the cases of folic acid deficiency are most probably secondary to iron deficiency anemia.

616.15-07
Leukemia - Diagnosis.

185. Leukemia. Perpetua S. Lacson (Hematologist, UE-RM Memorial Medical Center, Quezon City). *Filipino Family Physician*, July-Sept. 1971, v.9, no.3, p.11-13.

Of the 660 hematology cases seen during a 10-yr period at the UE-RM Memorial Medical Center, 73 were diagnosed as leukemia. The highest incidence was seen in children below 5 yrs old. Of the 73 cases, 5% were classified as acute, seen mostly in those one-14 yrs, and 48% were chronic, seen mostly in adults. It is observed that among Filipinos, chronic lymphocytic leukemia is rare compared to reports in literature. Presently, the drugs used in the treatment of acute leukemia, either solely or in conjunction

with a corticosteroid are Methotrexate, 6-Mercaptopurine and Vincristine. Daunomycin has been claimed to be 100% effective in bringing about initial remission. Cytosine arabinoside and L-asparaginase although claimed to be effective are as yet not available in the market.

616.24-076

Pleural effusion - Diagnosis.

186. Pleural biopsy: Report of a five-year experience on the first fifty-five cases done at the Santo Tomas University Hospital (1964-1969). Floro San Pedro, Ricardo Reyes and Generoso Basa. *Santo Tomas Journal of Medicine*, May-June 1971, v.26, no.3, p.181-193. tables. 3 refs.

The results of the pleural biopsy done on 55 clinically proven cases with pleural effusion are discussed. The procedure was done using Franklin's modification of the Vim-Silverman needle. It was found to be a reliable and safe diagnostic procedure giving a high percentage of informative results (51%). It is concluded that the most common causes of hydrothorax in Filipinos are tuberculosis and malignancy. Whitish to dirty or grayish white friable pleural tissue specimen was a common gross finding among those found to have either tuberculosis or malignancy.

616.314:616-053.2

Dental caries - Occurrence.

187. Common dental problems in children. Conchita A. Cabral. *Philippine Journal of Pediatrics*, Aug. 1971, v.20, no.4, p.166-169.

Three cases reports on dental problems are presented. One case was seen in a 3-yr-old girl who had localized swelling of the upper left primary central still firm in the socket and a full complement of the upper and lower primary dentitions with 4 carious molars. Her weak teeth were possibly due to poor pre-natal care of the mother. Also, the persistent use of the bottle produced trauma in the decayed tooth and underlying tissues causing abscess. A 2nd case seen in a 4-yr-old boy revealed a systemic disease with abscessed teeth and dental caries. A 3rd case seen in a 6-yr-old girl who had persistent toothaches presented psychological fear of a dental visit.

616.379:612.396

Diabetes mellitus.

Carbohydrates - Metabolism.

188. A liberal carbohydrate allowance in the dietary management of five patients with diabetes mellitus. Amelita C. Alvarez. *Philippine*

Journal of Home Economics, April-Sept. 1971, v.22, nos.2-3, p.67-69. 1 ref.

Five hospitalized diabetic male patients, aged between 57 and 88 yrs, were given a control diet and an experimental diet with lower carbohydrate intake than the home intakes based on desirable body weight. 2 patients with a constant dose of insulin showed a downward trend of fasting blood sugar (FBS) level, while another 2 patients with a constant dose of the oral drug Diabenase had normal FBS levels. A patient given the control diet alone showed an upward trend of FBS level with increased carbohydrate intake. Patients with the control diet receiving 175 g carbohydrate had an average FBS level of 133 mg%. Those given experimental diet with 245 g carbohydrate intake showed an average FBS level of 121 mg%. The experimental diet with 70% carbohydrate of non-protein calorie was more acceptable to the 5 patients.

616.38-089:616-053.1

Infant, Newborn, Diseases - Surgery.

Jejunum.

189. Survival of a three-and-one half pound baby with complicated jejunal atresia. Roman S. Ibay, Jr., Perla Dizon Santos-Ocampo, Carlomagno Santos-Ocampo and Arturo Ludan. *Philippine Journal of Pediatrics*, Aug. 1971, v.20, no.4, p.152-157. illus. 5 refs.

A 2-stage method of surgical management of complicated jejunal atresia in a premature infant is reported. The Bishop-Koop end-to-side anastomosis with exteriorization of the distal loop proved suitable for the case. This technique had enabled feeding by tube with establishment of jejunal continuity and prevented electrolyte losses. An extracorporeal gastrointestinal continuity obviated the dangers of intraperitoneal anastomosis. The case proved the efficacy of triglycerides which was well tolerated and which promoted a steady gain in weight.

616.5-053.1:616-02

Infant, Newborn, Diseases - Etiology.

Cyanosis.

190. Cyanosis in the newborn. Edna P. Jacinto and Aurea Tobias-Quiroz (Veterans Memorial Hospital, Quezon City). *Philippine Journal of Pediatrics*, Sept.-Oct. 1971, v.20, no.5, p.215-220. tables. 10 refs.

Chest x-ray of 100 newborn infants indicated that 90% of the cases with cyanosis were respiratory in nature and 10% were of cardiac and central nervous system pathology. Cases caused by respiratory conditions had better recovery

rate (70.2%) than those of cardiac and central nervous system origin.

616.6-053.2:616-07 616.6-053.2:616-093
Urinary tract infections - Diagnosis.

191. Urinary tract infection in children: clues to the diagnosis. Aurea Tobias-Quiroz and Sotero F. Fabella (Veterans Memorial Hospital, Quezon City). *Philippine Journal of Pediatrics*, Sept.-Oct. 1971, v.20, no.5, p.210-214. table. 15 refs.

Examination of 100 male and female children aged 0-12 yrs, revealed an incidence of 1.1% of urinary tract infection. A high incidence of infection was noted in males during the first year of life and in females during the first 4 yrs. The symptoms noted were those referable to the genitourinary tract, such as dysuria, pollakuria and hematuria, and those not related to the genitourinary tract of which fever was the most common. A study of the bacterial flora revealed a high incidence of Gram-negative *E. coli* infection in most of the patients.

The necessity of urinalysis is emphasized.

616.61-089
Kidney - Transplantation.

192. Experience in kidney transplantation. Domingo Antonio, Jr. (Faculty of Medicine and Surgery, University of Santo Tomas, Manila). *Santo Tomas Journal of Medicine*, July-Aug. 1971, v.26, no.4, p.265-281. graphs, illus.

The experiences in 3 cases of kidney transplantation conducted in the Kidney Transplantation Unit of the University of Santo Tomas are discussed. All cases (1 female and 2 males) had chronic glomerulonephritis in the terminal stage. In 2 cases, the donors and recipients were type "O" and the donors were siblings of and were younger than the recipients. The donor in a 3rd case was the father and both were type "B". The behavior and performance of the 3 transplants (from a living donor) differed. The better performance in one case is explained as possibly due to: 1) the oversize and healthy kidney of the donor who was heavier in weight than the recipient; and 2) the skill and gentleness in the dissection of the kidney. It is concluded that the most important factor that determines the ultimate and prolonged results of transplantation is the degree of histocompatibility.

616.63-078
Urine - Analysis.

193. Correlative studies on pyuria, quantitative urine cultures, and renal function tests. Alberto Daysog, Jr., Antonio Gonzaga, Florina Kaluag and Lagrimas Munoz. *Journal of the Philippine Medical Association*, June 1971, v.47, no.6, p.241-250. tables. 31 refs.

Urine specimens from 82 patients of both sexes, aged 7-82 yrs, were collected for routine and microscopic analyses, and cultures. The presence of 5 white blood cells/high power field was generally regarded as abnormal and often attributed to urinary tract infection. 74% of urine specimens with pyuria grew significant colony counts and 62% indicated significant bacteriuria. 80% of the urine specimens were associated with positive urine cultures. Further analysis of cases with "normal" leucocyturia revealed that positive urine cultures were obtained in those with pale blue type of white blood cells. Normal creatinine clearance and Fishberg concentration test in patients with pyuria and bacteriuria indicated urinary infection in the lower tract. Impaired creatinine clearance and concentration ability were attributed to pyelonephritis, chronic glomerulonephritis and essential hypertension.

616.915-053.2:615.371
Measles - Prevention & control.
Smallpox vaccine.

194. The smallpox vaccinations against measles. Eusebio Y. Garcia (Manila Central University, Caloocan City). *Journal of the Philippine Medical Association*, March 1971, v.47, no.3, p.117-121. table, illus.

The effects of smallpox vaccine on children with measles and on contacts in the same family group were studied. The disappearance of the 1st-day rash and fever in 70%, and the 2nd-day rash and fever in 30% within 24-30 hrs was explained on the basis of interferon mechanism. According to this mechanism, the smallpox virus interferon can easily inhibit the synthesis of the protein coats of the measles-virus particles. Based on the viral interference phenomenon, vaccinated contacts do not develop measles because the cellular DNAs are under the control of the smallpox virus, and hence the measles-virus particles cannot invade the smallpox-virus controlled cells.

616.927-06

Typhoid - Complications.

195. Intestinal hemorrhage in typhoid fever. Reynaldo Castillo, Armando Tiu, Federico Cruz, Jr. and Jose Pangan, Jr. (UST Hospital, Manila).

616.973-085

Gonorrhea - Drug therapy.

197. Sulfamethoxazole-Trimethoprim in the treatment of acute and penicillin-resistant cases of gonorrhea in women. Luis Mayo Lao, Rosa Gueva-*Santo Tomas Journal of Medicine*, July-Aug. 1971, v.26, no.4, p.309-318. tables. 10 refs.

A total of 27 cases, aged 4-50 yrs, of typhoid fever seen in 1967-1970 at the University of Santo Tomas Hospital are reported. 7 cases had intestinal hemorrhage and hypotension, 6 of which required blood transfusion. Of the 7 cases, 2 died both of which had other complications aside from hemorrhage. Of interest is a case with typhoid fever (negative with Widal) which required resection of the ileum to control hemorrhage. Therapeutic doses of Chloramphenicol, Ampicillin, Cortisone or Prednisone are recommended in the control of intestinal hemorrhage and infection in typhoid fever.

616.936:576.89:615.778

Plasmodium falciparum - Drug effects.

Chloroquine - Pharmacodynamics.

196. Chloroquine and other anti-malaria drugs resistant *Plasmodium falciparum* from Palawan, Philippines. Oscar L. Ramos, Antonio V. Jacalne, Fanny de la Cruz and Luceli C. Cuasay. *Journal of the Philippine Medical Association*, July 1971, v.47, no.7, p.297-322. graphs, maps, tables. 16 refs.

The study was conducted to determine the response of *Plasmodium falciparum* strains to standard chloroquine regimens and to other anti-malaria drugs among subjects with naturally acquired and blood induced infection. Results showed the existence of chloroquine resistant strains of *P. falciparum* at the RI grade at which resistance is manifested by clearance of the asexual parasitemia followed by recrudescence, and at the RII grade, resistance manifested by marked reduction of the asexual parasitemia but no clearance. Some of the chloroquine-resistant strains also exhibited resistance to the 4-aminoquinoline group of antimalarials and to combined pyrimethamine and primaquine. There was an indication that some strains of *P. falciparum* noted among naturally infected subjects exhibit reduced sensitivity to quinine.

ra, Jose G. Tamayo, Ernesto G. Moreno, Rodolfo O. Almonte (Faculty of Medicine and Surgery, University of Santo Tomas, Manila) and Ma. Luisa Montes Lao (Hospital ng Maynila, Manila). *Journal of the Philippine Medical Women's Association*, April-June 1971, v.9, no.2, p.29-35; *Santo Tomas Journal of Medicine*, May-June 1971, v.26, no.3, p.174-180. tables. 22 refs.

Treatment with Sulfamethoxazole and Trimethoprim in the proportion of 5:1 was tried in 54 cases of acute gonorrhea and in 40 penicillin-resistant cases in women. The antimicrobial drug combination was given at a dose of 6 tablets daily for 5 days. It was found effective, giving 90% cure rate in 54 cases of gonorrhea and 95% cure rate in the penicillin-resistant cases.

616.995:616.34

Intestinal diseases, Parasitic - Occurrence.

198. Incidence of intestinal parasitism among 609 medical technology students with the use of concentration technics. Pedro P. Chanco, Jr. and Pacita R. Reyes (Faculty of Medicine and Surgery, University of Santo Tomas, Manila). *Santo Tomas Journal of Medicine*, Sept.-Oct. 1971, v.26, no.5, p.347-362. tables. 6 refs.

Stool specimens of 609 apparently healthy medical technology students (aged 19-20 yrs) were examined using the Direct Fecal Smear in saline, Zinc Sulfate Centrifugal Flotation and Acid-ether Concentration techniques. 60.91% were found positive for intestinal helminth and protozoan parasites. The most commonly found nematode intestinal parasites were *Trichuris trichiuria* (46.3%), *Ascaris lumbricoides* (15.76%), hookworm (3.77%), *Oxyuris* (0.49%) and *Schistosoma* (0.16%). The most frequently met pathogenic protozoan intestinal parasites were *Entamoeba coli* (11.65%), *E. nana* (8.04%), *E. histolytica* (5.74%), *Giardia lamblia* (2.79%), *Iodamoeba butschlii* (0.16%), *E. hartmanni* and yeast (0.16%) and *Blastocystis hominis* (0.16%). Observations showed that if an apparently healthy group of individuals could have a high degree of parasitism, a higher degree would be possible among the lower income, the less educated and less health motivated groups. It is suggested that a good coprological examination be made and that specimens should be collected properly and sent to a competent microscopist for parasite determination.

616.995-085

Schistosomiasis - Drug therapy.

199. Niridazole in the treatment of Schistosomiasis japonica. Alfredo T. Santos, Jr., Bayani L. Blas, Julian S. Noseñas and Gerundio P. Portillo. *Journal of the Philippine Medical Association*, May 1971, v.47, no.5, p.203-207. tables. 7 refs.

The results of treatment with Niridazole in 106 cases of early stages of schistosomiasis were evaluated. The drug was found most effective at a dosage of 20-25 mg/kg/day giving a cure rate of 52.9% within one mo. in 72 cases. Stool examination revealed egg reduction of 96.3-98.9%. However, transient psychic side reactions were observed in some patients such that treatment was discontinued. It is recommended that treatment with Niridazole be done under close supervision.

OPHTHALMOLOGY

617.75:616-089.4

Cataract extraction. Sutures.

200. Human hair suture in cataract surgery - an experimental and clinical evaluation. Bienvenido V. Cabral (Philippine General Hospital, Manila). *Journal of the Philippine Medical Association*, June 1971, v.47, no.6, p.251-270. tables, illus. 15 refs.

The use of human hair as a possible substitute for silk and chromic catgut sutures in cataract surgery is evaluated. It was found that human hair compares with silk in diameter, but has a greater tensile strength and is more elastic than both silk and catgut. In experiments with rabbit corneas, human hair incited minimal tissue reaction and clinical signs paralleled histologic reactions. In 50 eyes of 38 patients in whom cataract extraction was done, human hair induced the same amount of congestion and inflammation in the eye as braided silk. When using human hair, the fornix-based conjunctival flap technique is recommended; the suture should be cut as close to the knot as possible.

617.76/.78:616-089.8

Orbit - Surgery.

201. Sliding bridge craft in exenteration of the orbit. Ulysses M. Carbajal. *Journal of the Philippine Medical Association*, June 1971, v.47, no.6, p.271-286. tables, illus. 89 refs.

The method of exenteration performed in 3 children with retinoblastoma and one adult with

malignant lymphoma of the orbit is briefly discussed. The technique gave excellent results as far as lining the orbital cavity is concerned and saved the patients from the offensive smell associated with sloughing off skin graft portions and accumulated exudate and blood. There was only one mortality among the cases and the status of one case is still unknown due to incomplete follow-up.

GYNECOLOGY. OBSTETRICS

618.17:616-085(=914)

Ovulation - Drug effects.

Clomiphene - Therapeutic use.

202. Experiences with Clomiphene Citrate; infertility among Filipinos. Carmen Enverga-Santos, Lourdes Prospero-delos Santos, Amelia Quinio-Poblete and Corazon Lim (Faculty of Medicine and Surgery, University of Santo Tomas, Manila). *Santo Tomas Journal of Medicine*, Sept.-Oct. 1971, v.26, no.5, p.337-346. tables. 18 refs.

An appraisal of infertile cases seen and treated with Clomiphene Citrate in the Clinical Division of the UST Hospital revealed no serious complications accountable to Clomiphene Citrate. Only minimal side effects were observed. The incidence of multiple birth was found practically nil among Filipinos and no congenital anomalies were noted. Clomiphene Citrate was found an ideal ovulant due to its availability, easy mode of administration and within the financial reach of Filipino patients.

The different etiologic causes of infertility among Filipinos and other uses of Clomiphene Citrate are given.

618.39:612.015(=914)

Pregnancy. Folic acid - Blood.

203. Folic acid and bleeding during pregnancy among Filipinos. Victor O. Tantengco, Florentino Santos, Jr., Anita M. Monzon, Corazon R. de Castro and Eleonora G. Cabrera (Institute of Public Health, University of the Philippines, Manila). *Journal of the Philippine Medical Association*, July 1971, v.47, no.7, p.337-349. graphs, tables, illus. 20 refs.

Data on the serum and red cell folate activity of 1223 normal pregnant, and 557 cases of abortion, 3rd trimester bleeding and abruptio placenta are presented. A significant difference in the mean red cell folate level was noted between normal pregnant, and cases of early abortion and abruptio placenta. Based on the erythrocyte folate concentration, the normal

pregnants were believed to have a higher reserve of tissue folate. A 12% incidence of folate deficiency was observed among the normal pregnant during the 1st and 2nd trimesters and 17% in the 3rd trimester. Among cases of early abortion, a 20% incidence was noted which was attributed to poor nutritional status, blood loss, low food intake and impaired absorption.

23 selected field cases yielded *Mycoplasma* organisms in 5 cases and 2 strains were also isolated from pipped embryos. Inoculation of broth cultures of an isolate in 8-day-old chick embryos and day-old chicks resulted in embryo mortalities and development of clinical signs, lesions and agglutinins in the inoculated chickens.

VETERINARY MEDICINE

619:616-006.6:636.4 636.4.089
Swine - Tumors. Frontal sinus.

619:616.935:636.4 636.4.089:615.779
Swine dysentery. Swine - Diseases and
pests - Therapeutics.

204. Frontal sinus adenocarcinoma - swine. Nestor Alonso (Cebu Institute of Medicine, Cebu City). *Animal Husbandry and Agricultural Journal*, May 1971, v.6, no.5, p.24-26. tables, illus. 5 refs. (Paper presented at the Annual Convention of the Philippine Veterinary Medical Association, May 17-18, 1971, Quezon City)

Adenocarcinoma of the frontal sinus among hogs slaughtered at the Cebu City Abattoir is reported. *Staphylococcus aureus*, *Proteus vulgaris* and *Escherichia coli* suspected as secondary invaders, were isolated from the neoplasms. Gross and microscopic findings proved that frontal sinus adenocarcinoma in swine is a primary neoplasm from the accessory glands around the frontal sinuses. It is manifested by extensive destruction of the frontal bone and cribriform plate of the ethmoid. Histological findings showed a proliferation of ovoid epithelial cells with well formed glands and a proliferation of spindle cells with less prominent gland formation. Foci caseation type of necrosis were numerous. Special stains were negative for fast bacilli.

206. The efficiency of Neomycin, Chloramphenicol and Dihydrostreptomycin on baby pig scours. Enrico Punzalan and Jose A. Eusebio (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, Aug.-Sept. 1971, v.55, nos.3-4, p.145-152. graph, tables. 10 refs.

The study was conducted on 185 crossbred (DJ x LD x YS) 4-day-old pigs. Results showed that Neomycin, Dihydrostreptomycin and Chloramphenicol dissolved in acacia leaves extract controlled scouring 1-3 days after treatment. Neomycin was found most effective and promoted the highest daily weight gain. The decrease in body temperature effected by the antibiotics was within the normal range.

619:616.937:636.92
Rabbits - Diseases and pests.
Trypanosoma evansi.

207. Experimental infection of rabbits with *Trypanosoma evansi*. Mauro F. Manuel (College of Veterinary Medicine, University of the Philippines, Quezon City). *Philippine Journal of Veterinary Medicine*, June 1971, v.10, no.1, p.42-44.

A total of 14 rabbits and 3 white rats were artificially infected with *Trypanosoma evansi* obtained from a horse. Results showed that rabbits are susceptible to *T. evansi* infection. Although the organism was not generally observed in the blood smear on microscopic examination, the blood was infective to white rats. The course of infection in rabbits ranged from one to 3 mo. The significant manifestations of the infection observed were: conjunctivitis, rhinitis, loss of appetite, decreased weight and dyspnea.

619:616.24:636.5(914) 636.5.089
Chronic respiratory disease of poultry.

205. Serologic and cultural studies of chronic respiratory disease (CRD) in the Philippines. Meliton N. Novilla, Cydippe F. Meñez, Elizabeth B. Brana, Fortunato O. Venegas (College of Veterinary Medicine, University of the Philippines, Quezon City) and Hospicio S. Timbol (Abbott Laboratories, Mandaluyong, Rizal). *Philippine Journal of Veterinary Medicine*, June 1971, v.10, no.1, p.65-72. tables. 11 refs.

Studies on serum samples of 37 different flocks indicated a widespread exposure of chicken to *Mycoplasma* organisms. 114 of the 828 serum samples were positive for *Mycoplasma gallisepticum* agglutinins and 37 of 108 samples were reactive with *M. synoviae* antigen. Cultures of

619:616.981.21:636.4

Swine erysipelas - Diagnosis.

208. Erysipelas in four-month old native pigs. Delfin O. Tumibay, Joseph S. Masangkay and Avelino M. Atienza (College of Veterinary Medicine, University of the Philippines, Quezon City). *Philippine Journal of Veterinary Medicine*, June 1971, v.10, no.1, p.73-77. table, illus. 5 refs.

Three subacute cases of erysipelas in 4-mo.-old native pigs are reported. The characteristic skin lesions indicated *Erysipelothrix rhusiopathiae* (*E. incidiosa*) infection. The similarity of Gram-positive rods to *Erysipelothrix* organisms both *in vivo* and *in vitro* and the recovery of 2 pigs to antibiotic therapy further substantiated the diagnosis of swine erysipelas.

619:616.986.7:636.4(914)

Leptospirosis - Occurrence. Leptospira - Isolation & purification.

209. Studies on leptospirosis in domestic animals and man in the Philippines. III. Isolation of *Leptospira pomona* from a pig. Teodulo M. Topacio, Meliton N. Novilla, Estela G. Famatiga, Marolo C. Garcia and Milagros H. Suva. *Philippine Journal of Veterinary Medicine*, June 1971, v.10, no.1, p.12-21. table. 23 refs.

An outbreak of leptospirosis in a piggery farm in Floridablanca (Pampanga) where an "abortion storm" occurred among pregnant sows is reported for the first time. The causative agent, *Leptospira pomona*, was isolated from the kidneys of one sow. A cycle of infection may have been established because the dogs and the caretakers were subsequently infected. However, the source of infection was not established since rats, the usual reservoir of the organism, did not yield *L. pomona*.

619:616.993:636.5

Poultry - Diseases and pests. Coccidiosis.

210. Different coccidial species affecting chicken in Quezon City and nearby provinces. Mario S. Tongson, Meliton N. Novilla and Eva B. Balediata (College of Veterinary Medicine, University of the Philippines, Quezon City). *Philippine Journal of Veterinary Medicine*, June 1971, v.10, no.1, p.1-6. tables. 6 refs.

The survey showed that of the 122 cases examined, 84 were positive for coccidiosis. The coccidial species found in the order of their prevalence were *Eimeria tenella*, *E. acervulina*, *E. maxima*, *E. mivati*, *E. necatrix*, *E. mitis*, *E. praecox* and *E. brunetti*. As a result of this

study, coccidiosis was confirmed to be more common than coccidiosis. Also, it was found that current coccidiostats do not seem to completely suppress oocyst production.

619:616.995:636.2:615.778

Cattle - Diseases and pests - Therapeutics. Tetramisole.

211. A preliminary study on the anthelmintic activity of Tetramisole in cattle. Mario S. Tongson and Rogelio S. Aragon (College of Veterinary Medicine, University of the Philippines, Quezon City). *Philippine Journal of Veterinary Medicine*, June 1971, v.10, no.1, p.22-35. tables. 29 refs.

Experiments were conducted on 43 calves of different breeds infected with *Neoscaria vitulorum*, *Strongyloides* sp., *Cooperia* sp., *Bunostomum* sp., *Haemonchus* sp., *Oesophagostomum* sp. and *Ostertagia* sp. Results showed that Tetramisole significantly reduced the mean egg counts of *Cooperia* sp., *Strongyloides* sp., *Bunostomum* sp., *Oesophagostomum* sp. and *N. vitulorum*. However, no effect was observed on the development and hatchability of the ova. The drug had no untoward effects on the animals.

619:616.995.1:636.7

Dogs - Diseases and pests. Filariasis - Veterinary.

212. Epizootiologic studies on canine filariasis. I. Studies on incidence in dogs in the Greater Manila Area from 1959 to 1970. Enrique R. Carlos, Enrique T. Carlos and Arsenio C. Directo (Dog and Cat Hospital, Bel-Air, Makati). *Philippine Journal of Veterinary Medicine*, June 1971, v.10, no.1, p.49-59. graphs, tables. 19 refs.

Of the 5580 dogs examined, 30.9% were found positive for *Dirofilaria immitis*. The highest incidence of infection was observed in 1959-1960, and the lowest, in 1970. Statistical analyses showed no significant relationship between sex and rate of infection except in 1962 and 1968 when a higher incidence in males was noted. High incidence of infection was observed among German Shepherds, mongrels and Great Danes.

619:636.293:615.78

Carabaos.

213. Immobilization of the tamaraw (*Anoa mindorensis*). H. H. Roth and B. Montemayor-Taca. *Philippine Journal of Veterinary Medicine*, June 1971, v.10, no.1, p.45-48. 7 refs.

The successful immobilization of tamaraw

(*Anoa mindorensis*) with administration of 3.5 mg Etorphine hydrochloride (M-99) for the purpose of restraining the animal for blood sampling is reported. No apparent late detrimental effect was noted. Based on clinical reactions observed, it is concluded that the tamaraw is an excitable species and is relatively slightly susceptible to narcotic effects of the drug. It is recommended that the use of Etorphine should be with a powerful synergistic tranquilizer.

619:636.4:616-007.4(043)
Hernia - Surgery - Swine.

214. A new surgical method of repairing umbilical hernia in young pigs. Melissa P. Hernandez. Quezon City, College of Veterinary Medicine, University of the Philippines, Aug. 1971. 2^l. 15p. plates, table. 4 refs. (Thesis. Doctor of Veterinary Medicine)

The new technique is based on the gradual inversion of the peritoneal sac into the abdominal cavity with Connell sutures. In the management of umbilical hernia in 10 pigs, one-5 mo. old, the technique proved to be safer and more practical than the conventional techniques. No ill effects were observed and there were no mortality or recurrence of hernia.

ENGINEERING

620.193:621.161
Metals - Scaling.

215. Scaling phenomena at the Tiwi geothermal power pilot plant. Medardo C. Tan Cardoso. *COMVOL Letter*, May-June 1971, v.5, no.3, p.1-4. tables.

Two types of scale formation due to steam discharge in the turbine, surface pipes and silencer of the power plant in Tiwi (Albay) are reported. One was analyzed as mostly amorphous silica and small amounts of carbonates. This material is apparently formed by the precipitation of dissolved solids in the steam principally silica. The other scale formation was found to be a soft, friable clayey mass of whitish color approximating the composition of andesite rock. It is deposited without attendant chemical reaction.

621.66:608
Pumps, Rotary.

216. New rotary liquid pump. Nelson M. Aboganda. *Philippine Inventors Bulletin*, Oct. 1971, v.2, no.2, p.12-13. illus.
The prototype model of the newly invented

pump, developed by Demetrio N. Bayog, lifted 38 gal of water/min through a 3¹/₂ in. plain suction pipe without any footvalve or other suction pipe accessories and discharged it thru a 4-in pipe which was 3.33 ft above the center of the pump. It lifted the water to a vertical height of 39.36 ft which is more than 5 ft beyond the theoretical maximum possible lift of 34 ft. However, observations showed that the machine's efficiency could still be increased, if the pump would be fully developed.

621.775:621.925
Grinding mills - Ball.

217. Cast grinding balls for the Philippine mining industry. E. M. Sacris (Atlas Consolidated Mining and Development Corp., Toledo City). Manila, 1971. 6p. 6^l. diagr., illus. Mimeographed. (Paper presented at the 3rd Symposium on Mineral Resources Development and the 18th Mine Safety Conference, Nov.29-30, 1970, Manila)

The new rack process of ball casting production in the Atlas Consolidated Mining and Development Corp. Foundry is briefly discussed. Basically, the process consists of casting the balls in racks. It is relatively simple and makes use of materials which are mostly available locally, such as steel scrap, silica sand and flour. With the new process, harder and tougher grinding balls at greater output volume are obtained than with the wheel casting machine. At the present rated capacity, the ball plant is expected to produce about 1500 tons of steel grinding balls/mo.

622.341:622.14(914)
Iron deposits - Philippines.

218. Offshore magnetite sand deposits in Lingayen Gulf. Antonio Caguiat. *Philippine Mining Record*, Sept. 1971, v.5, no.10, p.12-14. table.

Results of the study on the distribution of magnetite sand by sea bottom sampling and boring exploration indicated the presence of high grade magnetite sand deposit with a length of 7-8 km and a width of 2-3 km. The average thickness of the deposit based on 48 holes sunk is 2.6 m. The deposit yielded an average magnetic fraction of 9.4%. The total ore reserve was calculated to be 7,400,000 tons, of which 1,000,000 tons consisted of more than 15% magnetic fraction and 3,000,000 consisted of 10-15%. The total iron content of the concentrates ranged from 59.5 to 61.2% and the titanium oxide content, 7-7.5%. The grain size did

not exceed 500 microns with 64.4% consisting of grains within the 125-250 micron range.

622.341:622.7

Iron ore treatment.

219. PIM's pilot plant for the CPM-project. Antonio N. Tanchuling, Eleodoro N. Nasol and Armin K. Sebial. Manila, 1971. 21p. tables, diagr. Mimeographed. (Paper presented at the 3rd Symposium on Mineral Resources Development and the 18th Mine Safety Conference, Nov. 29-30, 1971, Manila)

The Pilot Plant testing was conducted at Larap, Jose Panganiban (Camarines Norte) using 4796 DMT of crude ore. The testing of the base metal ore is geared to the recovery of copper, pyrite, molybdenum and magnetite from its low grade ores. The plant could be operated from 50 to 100 TPD depending on the fineness of grind required.

622.61

Ore handling.

220. Draw control at the Atlas underground mining operations. Francisco A. Madamba (Atlas Consolidated Mining and Development Corp., Toledo City). Manila, 1971. 9p. tables, illus. Mimeographed. (Paper presented at the 3rd Symposium on Mineral Resources Development and the 18th Mine Safety Conference, Nov. 29-30, 1971, Manila); *Philippine Mining Record*, May 1971, v.5, no.6, p.24-27. illus.

The extraction of ore from the underground block cave mine in Atlas follows a standard procedure of draw control implemented efficiently to maximize tonnage and grade extraction, and minimize dilution. Tonnage and grade are accounted in determining the percent extraction and percent grade recovery from the block after it is mined. The caving characteristics of the rocks composing the orebody and the different draw rates are considered to prevent piping, and to decrease the incidence of boulders and hang ups in the draw points.

AGRICULTURE AND FORESTRY

631.53:582.547.1

Plant propagation. Anthurium.

221. How to grow anthurium. R. C. Barba and F. I. Hilario, Jr. (College of Agriculture, University of the Philippines, College, Laguna). *Agriculture at Los Baños*, Jan.-March 1971, v.10, no.3, p.2-4. illus.

Anthurium andreanum, a herbaceous plant, is

propagated by shoots or root cuttings and grows best in 65-80% shade, high humidity and in various media that drain well. Wood shavings and rice hulls combined with chicken or cow manure are the recommended media for growing anthurium in the Philippines. Diseases and pests that cause damages to the plants and its control are given.

631.561:633.18

Threshing machines.

222. Paddy table thresher. Amir U. Khan (International Rice Research Institute, Los Baños, Laguna). *Philippine Inventors Bulletin*, Aug.-Sept. 1971, v.1, no.2, p.19, 23. illus.

A power-operated rice thresher for freshly harvested paddy was developed for Asian conditions. It is designed with a flat threshing surface for more effective use and for considerable reduction in thresher weight. It is simple and can be fabricated in other countries. With 4 men feeding, the thresher has an output of 300-400 kg paddy/hr.

631.67

Irrigation.

223. Scheduling irrigation intervals using meteorological data. Leon M. Arceo. *Sugarland*, June 1971, v.8, no.6, p.12, 31, 34. tables, illus.

Meteorological data, specifically temperature and net sunshine radiation, provide an approximate evapo-transpiration data which can be used in estimating soil moisture and irrigation requirement. The method using data obtained from Hawaiian Philippine Co. (Negros Occidental) for March 1971 is described. In practice, when the water balance is below 50% of the available water, irrigation should commence. The net application of 2.4 in H₂O to silt loam soil was found sufficient to replace the available water used up by the plants. During daylight irrigation, 2.88 in. of H₂O is recommended.

631.874:631.43

Green manuring - Experiments, Field.

224. Effect of green manuring on some physical properties of previously puddled soil. Orlando P. Manuel and Hermenegildo C. Gines. *CLSU Scientific Journal*, July-Dec. 1971, v.7, no.2, p.155-161. tables. 18 refs.

Results of the study revealed that the treated plots have better soil physical conditions than the control plots. It was observed

that the increasing organic matter content with increasing amount of mungo seeds up to 60 kg/ha. increased the percent porosity and improved the bulk density of the treated plots. Hence, green manuring could be used to improve the poor structure of puddled soils.

633.17:632.3(043)

Sorghum - Diseases and pests.

225. Mechanical inoculation of sorghum plant (*Sorghum vulgare* Pers.) with viruses harbored in mosaicked grasses and other plants. Pramoch Skuntanag. Victoneta Park, Malabon, Rizal, Araneta University Foundation, Aug. 1971. 8l. 56p. table, illus. 18 refs. (Thesis. M. S. in Agriculture, Major in Plant Pathology)

Results of studies showed that the viruses from 7 species of mosaicked grass induced symptoms in sorghum typical of leaf mottling in varying degrees, with those from *Saccharum officinarum* and *Paspalum conjugatum* producing severe symptoms of mosaic. The incubation period of the disease ranged from 5 to 15 days. However, the viruses from 7 species of mosaicked legumes did not produce any symptoms in sorghum indicating that the legume mosaic viruses are different from that of grass.

633.18:581.13:546.18

Rice - Chemical composition.

Plants - Phosphorous content.

226. The effects of nutrient deficiencies of nitrogen, potassium and manganese on the critical phosphorus concentrations in the rice plant (*Oryza sativa* L.). Roberto E. Coronel and Ellis F. Wallinan (College of Agriculture, University of the Philippines, College, Laguna and Dept. of Soil Science and Agricultural Engineering, University of California, Riverside, California, respectively). *Philippine Agriculturist*, June-July 1971, v.55, nos.1-2, p.83-96. graphs, tables. 20 refs.

Using grain weight as yield index, the critical P concentration in the second leaf from the top leaves was found to be 0.3% when the supply of other nutrient elements was adequate. Deficiencies of N, K and Mn decreased the critical P value to 0.14, 0.16 and 0.14%, respectively. The concentrations of P in the leaves of plants deficient in N, K and Mn were significantly higher than those adequately supplied with nutrient elements. It is concluded that the critical concentration of P is not constant but varies with the nutritional status of the plant with respect to other nutrient elements.

633.18:631.52(043)

Rice - Hybrids.

227. A study on the cross compatibility of rice with wheat, Java grass and cogon grass. Sompol Panmanee. Victoneta Park, Malabon, Rizal, Araneta University Foundation, June 1971. 1l. viii, 59p. map, tables, illus. 7 refs. (Thesis. M. S. in Agriculture, Major in Agronomy)

The study made use of BPI 76-NS, IR₂₂ and Chinese No. 2 rice varieties as female parents. Poorly and fairly developed seeds were obtained from rice x Java grass and rice x wheat crosses; no seed developed from rice x cogon grass cross. The seeds of the rice x Java grass cross failed to germinate, while 3 of the 58 fairly developed seeds from rice x wheat cross germinated, one of which was from IR₂₂ x wheat NP-723 cross and 2 seeds from Chinese 2 x wheat T-31.

633.18:631.531

Rice - Seed. Plants, Effect of colchicine on.

228. The effect of pre- and post-treatment of colchicine in irradiated rice seeds. Emelita G. Velasco and Filomena F. Campos. *CLSU Scientific Journal*, Jan.-June 1971, v.7, no.1, p.133-154. tables, illus. 36 refs.

Experiments with Milfor 6(2) variety showed that pretreatment with colchicine before irradiation decreased percentage seedling survival, seedling height, panicle number and spikelet fertility. Morphogenetic offtypes with respect to plant habit and grain type were isolated. Cytological analysis of pollen mother cells indicated cells having 24 bivalents, 13 bivalents, "sticky" chromosomes, laggards, chromatid bridges and multivalent association.

633.18:631.552:632.5 632.954

Rice - Yield. Weeds - Chemical control.

229. Evaluation of phenoxy-propanil treatments for the control of *Scirpus maritimus* L. in lowland rice. E. C. Paller, Jr., Rosario T. Lubigan and M. R. Vega (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, Oct.-Nov. 1971, v.55, nos.5-6, p.225-231. tables. 4 refs.

Results of experiments showed that propanil and phenoxy herbicides, such as 2,4-D and MCPA whether applied singly or in combination, are effective in controlling *Scirpus maritimus*, a weed species fast becoming noxious in the Philippines. A combination of 0.5 kg/ha. phenoxy and 1-2 kg/ha. propanil effected the high-

est yield equalling that effected by handweeding. MCPA gave the best weed control when applied 20 days after transplanting and then followed by propanil at 30 days after transplanting. 2,4-D/propanil should be applied 20 days after transplanting.

633.18:632.51:632.954 633.18:631.552
Rice - Yield. Herbicides - Effect on plants.

230. The effect of continuous herbicides treatments on weed population and yield of lowland rice. M. R. Vega, E. C. Paller, Jr. and Rosario T. Lubigan (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, Oct.-Nov. 1971, v.55, nos.5-6, p.204-209. graph, table. 5 refs.

Eight herbicide treatments were tried on ricefield plots populated with *Echinochloa crus-galli* (L.) Beauv., *Monochoria vaginalis* (Burm. f.) Presl., *Scirpus maritimus* L., *S. supinos* L. var. *lateriflorus* (Gmel.) T. Koyama and *Cyperus difformis* L. Only *S. maritimus* survived the herbicide treatments used except Propanil. Because of its greater competing ability, it was the most predominant weed after 3 seasons on such treatments. *N. vaginalis* predominated plots treated with Propanil. Continuous application of one particular herbicide induced the predominance of resistant species, thus grain yield was relatively low in all treatments because of the high population of resistant weed species.

633.18:632.9
Rice - Diseases and pests. Algae - Control.

231. Algicide for direct-seeded rice. IRRI Reporter, 1971, no.2, [p.2-3]. illus.

Studies conducted by the International Rice Research Institute, Los Baños (Laguna) showed that Dichlone 50 WP is an effective and safe algicide for rice fields. It is recommended at the rate of 6 kg/ha., at which rate fish growth in rice paddies is prevented. Lower rates are effective in slowing the growth of algae without harming fish.

633.2:631.53
Grasses - Breeding. *Brachiaria ruziziensis*.

232. The introduction and culture of Kennedy Ruzi grass in Milagros stock farm, Masbate. Sixto N. Nelmda (Milagros Stock Farm, Milagros, Masbate). *Animal Husbandry and Agricultural*

Journal, July 1971, v.6, no.7, p.27. illus.

Kennedy Ruzi (*Brachiaria ruziziensis*) was successfully grown in Milagros. In experiments with rootstocks and cuttings planted on fine gravelly sandy loam soil and level surface well drained with sticky clay loam soil, Kennedy Ruzi grew luxuriantly in both soil types, although those grown from rootstocks gave a higher percentage germination. The best planting time noted was during the rainy season. Analysis of the grass gave 10.10% crude protein, 3% fat, 25.40% crude fiber, 13.90% ash and 47.60% NFE (dry basis). The grass was found an important source of nutritious feed for livestock.

633.5(914):631.53(043)
Fiber plants and vegetable fibers.

233. Effects of culture on the agronomic and fiber characters of some wild bast fiber crops in the Philippines. Vicente G. Lontoc. Victor-neta Park, Malabon, Rizal, Araneta University Foundation, July 1971. 84. 86p. tables, illus. 17 refs. (Thesis. M. S. in Agriculture, Major in Agronomy)

Observations were made on 9 species of wild bast fiber under culture. It was noted that culture significantly promoted taller plants as observed in *Corchorus olitorius* Linn., *C. acutangulus* Lam., *Malachra capitata*, *M. fasciata* Jacq. and *Sida rhombifolia* Linn. An increase in percentage dry fiber recovery based on fresh weight was obtained in almost all species except *C. acutangulus* Lam. Also, a significant increase in tensile strength of *C. olitorius* Linn., *C. acutangulus* Lam., *M. fasciata* Linn. and *Sida rhombifolia* Linn. was observed. *C. olitorius* Linn. had greater fiber stretch.

633.51:631.531
Cottonseed. Germination - Seedling emergence.

234. Chilling response of germinating cotton seeds with emphasis on proteins and isoenzymes. Tricita H. Quimio and G. R. Noggle (College of Agriculture, University of the Philippines, College, Laguna and Dept. of Botany, North Carolina State University, Raleigh, North Carolina, USA, respectively). *Philippine Agriculturist*, June-July 1971, v.55, nos.1-2, p.11-25. graphs, illus. 24 refs.

Two hrs of chilling exposure at 5°C did not significantly affect the uptake of water and the amount of proteins and amino acids of the whole cotton seed. Significant differences between the control and chilled seeds were observed when the chilled seeds were allowed to germinate at

30°C for 3 days more after 2 hrs of chilling. Longer chilling treatments slowed down the dry and fresh weight changes. The longer the seeds were exposed to the chilling temperature, the more the number of nub seedlings produced, indicating that increased chilling time decreased the number of normal seedlings produced. Less proteins and more amino acids in the chilled seeds suggested protein breakdown. 2 hrs of chilling immediately showed only slight alteration in the isozymic patterns of the total protein, glutamic, glucose-6-P, lactic and malic dehydrogenases.

The effective preconditioning treatments in reducing the injury of chilling to cotton seedlings are given.

633.71:631.52:632.4

Tobacco - Disease and pest resistant varieties.

235. Screening of some tobacco varieties for resistance to damping-off disease caused by *Pythium debaryanum* Hesse. Somboon Pakdi and Francisco B. Claridad (Araneta University Foundation, Malabon, Rizal). *Araneta Journal of Agriculture*, July-Sept. 1971, v.18, no.3, p.165-186. graphs, tables. 15 refs.

Of the 51 tobacco varieties tested, 8 were found highly resistant to *Pythium debaryanum* Hesse, namely Ta-kam, *N. occidentalis*, Coker 139, Brown Leaf, Dixie Bright 27, Golden Cure, Coker 187 Hicks and Pong Tafa. 10 varieties were considered resistant, 19 fairly resistant and 14 were either least resistant or considered susceptible. Further screening of the highly resistant varieties is recommended.

633.71(914):632.3(043)

Tobacco - Diseases and pests.

236. Plant harbored viruses that infect tobacco in the Philippines. Rungsun Im-erb. Malabon, Rizal, Institute of Graduate Studies and Applied Research, Araneta University Foundation, July 1971. ix, 1l. 58p. 1l. tables, illus. 28 refs. (Thesis. M. S. in Agriculture, Major in Plant Pathology)

Experiments were conducted on Simmaba variety. Results showed that the viruses from mosaic-like graminaceous species, such as *Rottboellia exaltata* Linn. F., *Digitaria sanguinalis* (Linn.) Scop., *Paspalum conjugatum* Berg., *Zea mays* Linn. and *Gliricidia sepium* Linn. (Jacq.) Stued., infected tobacco. However, the virus from non-grass plant species did not infect tobacco plants.

634.0.001.3

Trees. Phytograph.

237. Tree phytography. J. P. Rojo (FORPRIDE-COM, College, Laguna). College, Laguna, Forest Products Research & Industries Development Commission, Aug. 1971. 3p. 5 refs. (Technical note no. 108)

A scheme for tree description is briefly discussed.

634.0.2

Kaatoan bangkal seedlings.

238. Growth and survival of kaatoan bangkal seedlings potted in different size-pots and in various potting media. Neptale Q. Zabala and Jose Q. Sargento (College of Forestry, University of the Philippines, College, Laguna and Central Forest Experiment Station, College, Laguna, respectively). *Philippine Lumberman*, Sept. 1971, v.17, no.9, p.48, 50, 52, 54, 56-57. graphs, tables, illus. 8 refs.

Kaatoan bangkal [*Anthocephalus chinensis* (Lamb.)] seedlings were planted on 6 kinds of potting media in plastic film bags and milk cans. Results showed that the best potting medium was the 1:1 mixture of humus and sand, followed by 1:1 mixture of humus and garden soil in terms of high survival and fast growth. Of the pot sizes studied, the 6" x 9" plastic bags were the best in terms of growth and survival.

634.0.2:582.475:631.53

Forest planting. Pine.

239. Results of pine planting in Bislig. F. O. Chinte. *Forests and Farms*, Sept. 1971, v.6, no.9, p.4-5, 15-16. illus.

Trial plantings in Bislig (Surigao del Sur) of Mindoro pine (*Pinus merkusii* Jungh & de Vr.), Caribbean pine (*P. caribaea* Morelet.) and Benguet pine showed promise for bigger plantations; however, *P. patula* Schl. & Cham. may not successfully grow, being a species of higher elevation. Survival of the seedlings ranged from 38 to 100% after germination and 59-96% after potting. In the plantation, survival varied with species and age of trees. Height growth varied indicating differences in the reactions of the species with the local environments.

634.0.2:582.475:631.53 582.47:631.53
Pine cones.

240. Cone maturity as variable to germination of Benguet pine (*Pinus insularis*, Endl.) seeds. V. P. Veracion and C. B. Padolina (Bureau of Forestry, Pacdal, Baguio City). Manila, Forest Research Division, Bureau of Forestry, April 1971. 9p. table. 5 refs. (Occasional paper no. 41)

Tests on specific gravities of cones collected in Oct., Nov., Dec., Jan. and Feb. and seed germination were conducted. The lowest specific gravity (0.88) and the highest seed germinations 77.50%, 78.95% and 80.19% were obtained in Nov., Dec. and Jan., respectively. The results indicated that the specific gravity is inversely related to seed germination, indicating the existence of an optimum seed moisture content which favors germination.

634.0.2:582.752.3:631.588
Tree seedlings. Radiation - Biological effect.

241. Radioisotopes revolutionize tree growth. Rosalio D. G. Balane. *Reforestation Monthly*, Oct. 1971, v.10, no.22, p.5, 9.

Experiments to enhance the growth of forest trees by irradiation were conducted on mahogany (*Swietenia macrophylla*) seed. Using Co-60, a dosage of 500 r increased the percentage germination and survival rate of seedlings, although higher doses of from 1000 to 5000 r decreased the percentage germination and survival rate. Also, seedlings irradiated with 500 r dosage showed fair increase in diameter, height and weight. Over-exposure to radioactivity could adversely alter the constitution of the seeds and, thus, affect their viability.

634.0.5:582.825
Forest mensuration. Shorea.

242. Wood and bark volumes of tangile [*Shorea polysperma* (Blanco) Merr.] in Bislig forest. F. O. Chinte. *Philippine Lumberman*, Sept. 1971, v.17, no.9, p.30, 34, 36, 38. tables. illus.

Data gathered in 1967 from the different logging areas of Bislig Bay Lumber Co. and Paper Industries Corp. of the Philippines showed the following results: 1) average Girard Form Class (GFC) value for young trees was 79.4+ 2.7% and for mature trees, 86.5+ 0.8%; 2) average bole taper increased from stump to up the tree with the young trees, but decreased with the mature trees; 3) ratio of the volume of the 5-m log section of the tree to its total volume did not

show significant variation for each height class; 4) stump diameter square and height of clear bole showed high correlation coefficient with tree volume; 5) ratio of bark volume with wood volume/tree decreased slightly but uniformly with the increase in stump diameter; and 6) smaller trees were found to have more bark/unit of wood volume than the bigger trees.

634.3:632.16
Citrus - Disease and pests.

243. Tissue incompatibility, the likely cause of bud-union crease of calamondin with certain citrus varieties. A. L. Martinez (Bureau of Plant Industry, Lipa City). *Philippine Journal of Plant Industry*, First-Third Quarter 1971, v.36, nos.1-3, p.33-36. plate. 10 refs.

Results of the experiments conducted for a 3-yr period revealed that: bud-union crease of trees of certain combinations of calamondin and other kinds of citrus is not virus induced; 2) the bud-union crease developed between calamondin and Eureka lemon and between calamondin and sweet orange irrespective of which was the scion of the rootstock is characterized by necrotic depressions or constrictions in the wood at the bud-union with corresponding necrotic projections on the cambial face of the bark; 3) bud-union crease was not produced on trees of calamondin on rootstocks of calamondin, calamandarin, Ladu and Florida Rough lemon and on interstocks of calamondin compatible varieties, such as calamandarin, Ladu and Florida Rough lemon between calamondin and Eureka lemon and between calamondin and sweet orange; and 4) repeated inoculations of the normal budling trees had no effect on them.

634.3:632.2(914)
Citrus - Diseases and pests.
Nematodes - Parasitic in plants.

244. The association of plant parasitic nematodes with the citrus decline in the Philippines. R. G. Davide and A. G. dela Rosa (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, June-July 1971, v.55, nos.1-2, p.26-66. graphs, map, tables, illus. 16 refs.

A nation-wide survey was conducted to determine the occurrence, distribution and population density of plant parasitic nematodes associated with the citrus decline in the Philippines. The 12 genera of plant nematodes identified were: *Tylenchulus*, *Helicotylenchus*, *Xiphinema*, *Paratylenchus*, *Hoplolaimus*, *Pratylenchus*, *Criconeoides*, *Tylenchorhynchus*, *Hemi-*

cycliophora, *Longidorus*, *Scutellonema* and *Diphtherophora* sp. Of these nematodes, *Tylenchulus semipenetrans* was found the most abundant and widely distributed throughout the country indicating that the population density of *T. semipenetrans* was correlated with the decline of the citrus plants. The highest population level of *T. semipenetrans* was in sandy clay loam soil at pH 6-6.6 and the lowest, at pH 3.9-4.5. The nematode population was relatively higher at the early stage of the decline than at the advanced stage. The highest population level was found in plants at 11-15 yrs old.

634.3:632.3

Citrus - Diseases and pests.

245. Translocation and movement of the greening pathogen in citrus. A. L. Martinez (Bureau of Plant Industry, Lipa City). *Philippine Journal of Plant Industry*, First-Third Quarter 1971, nos. 1-3, p.29-32. table. 5 refs.

The pathogen of greening failed to move upward or downward through the girdled portion of the stem of seedlings of Ladu, Ponkan, and Szinkom mandarin and Madam Vinous sweet orange, suggesting that it is translocated in the phloem. The pathogen passed from the inoculum buds into the seedlings stocks of Ladu and Ponkan in a period of 7 days.- Author's Abstract

634.616.002.6(914):380.11

Coconut industry and trade.

246. The international demand for Philippine coconut products: A regional analysis. Aida Recto-Librero (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, June-July 1971, v.55, nos.1-2, p.97-118. tables.

Analysis estimated that in the United States, the demand for coconut oil exports of the Philippines was highly price inelastic but quite elastic with respect to income. The demand for copra exports showed an elasticity range of -.3 to -.6 for the US, -.4 to -.1 for the European Common Market, -1.6 to -2 for Canada and other Western Europe, -1.7 for Latin America and -.9 for other countries. Important substitute products were palm kernel, soybean, cottonseed and sunflower seed oils. The growth in livestock population in the European Economic Community significantly influenced the demand for copra. The demand for desiccated coconut in the US was not responsive to price but it was affected by the price of bakery products and confectionery sales. Philippine exports to

other countries face competition with exports of the same product from Ceylon.

635.25:631.52:631.55

Onions - Varieties. Onions - Yield.

247. Onion introduction and acclimatization. Cornelio B. Macabasco (Bureau of Plant Industry, Manila). *Animal Husbandry and Agricultural Journal*, June 1971, v.6, no.6, p.33. table. 2 refs.

Several onion varieties and strains were introduced and studied in Manila climatic and soil conditions. Of the varieties tested, Granex was found to have the best eating and storage qualities with a computed yield of 22,008 k/ha.

635.25:631.552

Onions - Yield. Plant competition.

248. Effect of duration of weed control and weed competition on the growth and yield of onion. Daniel A. Lucas and Martin M. Guantes. *CLSU Scientific Journal*, July-Dec. 1971, v.7, no.2, p.178-186. tables. 7 refs.

Transplanted onions without rice straw mulch were grown for 2-9 wks under weed-free and weedy conditions. Unweeded and handweeded treatments with or without mulch treatments were included for comparison.

Results revealed that the highest yield can be obtained by maintaining the onion plot free from weeds for a period of 7 wks and that weeds should not be allowed to compete with the plants more than 2 wks after transplanting. It was also noted that handweeded treatment with mulch gave significant results.

635.25:631.552:632.5

Onions - Yield. Plant competition.

249. Duration of weed competition and weed control and the effect on yield. II. Transplanted onions. E. C. Paller, Jr., M. M. Guantes, J. M. Soriano and M. R. Vega. *Philippine Agriculturist*, Oct.-Nov. 1971, v.55, nos.5-6, p.221-224. tables. 4 refs.

The study was conducted in a plot of Red Creole seedlings populated predominantly with *Echinochloa colorum* and *Trianthema portulacastrum*. Results showed that competition with weeds for as short as 2 wks after transplanting reduced yield by about 42%. Weed control beyond 7-8 wks after transplanting decreased yield mainly due to the high percentage of unmarketable bulbs. Early season weed control for transplanted onions is recommended.

Mulching was found to reduce weed competition.

635.64:631.52

Vegetables - Varieties.

250. Improvement on tomato, eggplant and sweet pepper. Glicerio M. Garcia (Bureau of Plant Industry, Manila). *Animal Husbandry and Agricultural Journal*, July 1971, v.6, no.7, p.16-18. tables. 12 refs.

Through proper breeding methods, the following varieties adopted to rainy season planting were developed: Improved Harbot for field tomatoes, GNST-1 and GNST-2 for glasshouse tomatoes, Dingras Multiple Purple eggplant variety and All-Season Sweet Pepper. Field performance tests gave a mean computed yield of 8.97 tons fruits/ha. for Improved Harbot, 21.9 kg fruits/plot for Dingras Multiple Purple, 11.6 tons fruits/ha. for All-Season Sweet Pepper and an average weight of 9.65 kg and 8.67 kg fruits/plants for GNST-1 and GNST-2, respectively. The varieties showed positive tolerances to excessive soil moisture.

635.65:631.52:631.552

Legumes - Varieties. Legumes - Yield.

251. BPI newly-developed varieties of field legumes. E. B. Ballon, B. M. Legaspi, R. R. Matias, D. M. Gabucan, E. M. Catipon and M. F. Maligalig (Bureau of Plant Industry, Manila). *Animal Husbandry and Agricultural Journal*, June 1971, v.6, no.6, p.17-19, 22. tables.

New varieties of soybean, mungo and peanut introduced and developed by the Bureau of Plant Industry and the UP College of Agriculture, College (Laguna) have been studied. Of the 7 soybean varieties studied, Miloxi 399 gave the highest protein content (40%) which is suitable for food and feed processing, while Biyeloxi 256 had the highest oil content (21-22%) which is useful for oil processing. The vegetable type varieties which are also rich in protein are being developed for direct home consumption. The 5 new varieties of mungo are green-seeded types rich in carbohydrates; the yellow-seeded types which are rich in protein and carotene are being evaluated for their yield performances. Of the 3 new peanut varieties recommended for commercial production, the E. G. Bunch variety was found suitable for oil manufacture.

635.65:631.531

Seeds, Effect of gamma rays on.

Broad beans. Peas.

252. Effects of storage on gamma-irradiated seeds of *Vicia faba* and *Pisum sativum*. Arturo T. Blancaver (Central Mindanao University,

Musuan, Bukidnon). *CMU Journal of Science and Technology*, Jan.-Dec. 1971, v.5, no.1, p.327-339. graphs, tables. 14 refs.

Studies showed that irradiated *Vicia faba* seeds stored for one wk at 8°C gave higher percentage germination and survival rate than *Pisum sativum*. However, severe growth inhibition was observed at higher gamma doses (6 rads) in both *Vicia* and *Pisum*. This effect may be related to the very low rate of recovery of impaired cell division due to irradiation. *Vicia* and *Pisum* leaves were more sensitive to gamma irradiation compared with the stem elongation.

635.65:631.55:631.84

Soybeans - Yield.

253. Yield response and other agronomic variables of CES-486 soybean variety as affected by nitrogen rate and plant population density. Herminio M. Pava (Central Mindanao University, Musuan, Bukidnon). *CMU Journal of Science and Technology*, Jan.-Dec. 1971, v.5, no.1, p.350-357. tables. 10 refs.

Results showed that an increase in N fertilization and plant density did not affect the seed and dry matter yields, and the number of pods and nodes/plant during the wet season. However, the yield tended to increase with each increase of N but not with plant density in the dry season planting. Simple correlation and regression analyses revealed that seed yield was positively correlated with the number of seeds, pods and nodes/plant. Plant height was favorably affected by N treatment, although plant density had no effect in both planting seasons. Highly significant effects of both N and plant density on maturity were noted.

635.656:631.552:631.52

Beans, Mung - Experiments, Field.

Beans, Mung - Yield.

254. Yield performance of seven improved mungo varieties at the Ilagan Experiment Station. R. V. Cortado (Maligaya Rice Research and Training Center, Muñoz, Nueva Ecija). *Philippine Journal of Plant Industry*, First-Third Quarter 1971, v.36, nos.1-3, p.15-20. tables. 2 refs.

The study was conducted for 4 consecutive cropping seasons (2 dry and 2 wet season plantings) using MG50-10A, MG55-3, MG59-6, MG60, MG61-2, BPI Glabrous No. 3 and CES 14 varieties. Results showed that all the MG varieties, particularly MG50-10A and MG59-6, consistently gave higher yields than CES 14 and BPI Glabrous No.3. The differences in yield among the MG varieties were insignificant in all trials. These varie-

ties and the BPI Glabrous No. 3 had significantly shorter maturity periods than CES 14, regardless of the season of planting. Results further showed that the wet season crops gave much higher yields (averaging from 16.64 to 23.44 cavans/ha.) than the dry season crops (11.44 to 13.48 cavans/ha.).

635.656:632.951

Beans, Mung - Diseases and pests.
Insecticides - Effect on plants.

255. Granular systemic insecticides in the control of pests affecting mungo bean. Santiago J. Pablo and Guillermo A. Pangga (Bureau of Plant Industry, Manila). *Philippine Journal of Plant Industry*, First-Fourth Quarter 1971, v.36, nos.1-3; p.21-28. tables.

Experiments showed that Cyolane, Disyston, Cytrolane, Solvirex and Thimet at 1.5 kg active ingredient/ha. effectively prevent the pest infestation at the early stage of growth of the mungo bean plants. The application of the systemic insecticides in the soil increased the yield of shelled mungo bean from 100 to 500 kg based on the computed yield/ha. The highest yield was obtained from the Cyolane-treated plots followed by Solvirex, Disyston, Cytrolane and Thimet.

ANIMAL HUSBANDRY AND PRODUCE

636.2.082

Insemination, Artificial - Cattle.
Water buffaloes.

256. A guide for fieldmen in artificial insemination of cattle, carabaos and buffaloes. *Animal Husbandry and Agricultural Journal*, Aug. 1971, v.6, no.8, p.20-24. graph, illus.

The guideline was prepared by the Livestock and Poultry Propagation Division, Bureau of Animal Industry (Manila). Accordingly, an optimum breeding time of 6 hrs before mid-estrus, during mid-estrus and 6 hrs after mid-estrus of the current estrus period could give a greater conception rate. For better chances of conception, breeding should be done 60 days after calving. The amount of semen to effect conception depends upon the density of healthy sperms. In general, the best insemination time is at the optimum heat period.

636.293(914):591.134(043)

Carabaos, Weight and measurements of.

257. The correlation of body weight to body measurements in Philippine native carabaos. Josefino A. Maon. Quezon City, College of Veterinary Medicine, University of the Philippines, Aug. 1971. 5ℓ. 16p. 3ℓ. tables. 12 refs. (Thesis. Doctor of Veterinary Medicine)

The study involved 113 male and 52 female carabaos. The body measurements taken were the midriff girth, heart girth, height and body length. Using a simple regression formula, results showed that the body measurements are highly correlated to the body weight of the carabaos. It was noted that the midriff girth is the best determinant for estimating the body weight.

636.4:591.134

Swine, Weight and measurements of.

258. The influence of sequence of birth and birth weight on pig performance. V. G. Arganosa and F. F. Penalba (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, June-July 1971, v.55, nos.1-2, p.119-124. tables. 7 refs.

A total of 756 pigs born to 76 sows were studied. It was observed that the first born pigs were significantly heavier at birth than the other pigs except the 7th. The 11th and 12th born pigs were significantly smaller at birth than those farrowed ahead of them and had lower survival rate up to weaning. While the sequence of birth had no significant effect on weaning weight, it was noted that the bigger pigs at birth had higher weaning weight and survival rate. No significant difference in birth weight was noted between sexes.

636.4:591.134(043)

Swine, Weight and measurements of.

259. Comparison of liveweights of hogs by using a table based on heartgirth and body length with actual scale weights. Manuel O. Boado. Quezon City, College of Veterinary Medicine, University of the Philippines, May 1971. 4ℓ. 12p. tables. 3 refs. (Thesis. Doctor of Veterinary Medicine)

A total of 500 Large White, Landrace, Duroc, Poland China and Berkshire breeds were used in the study. The differences between the actual and calculated body weights ranged from 1.94 to 22.23 kg. Statistical analysis showed that the differences were insignificant.

636.4.082.4(043)

Swine - Care of sows.

260. Some observations on the farrowing of swine in the Philippines. Guillermo E. Quejada. Quezon City, - College of Veterinary Medicine, University of the Philippines, April 1971. 4 ℓ . 30p. tables. 12 refs. (Thesis. Doctor of Veterinary Medicine)

Observations were made on 405 farrowing sows of the Danish Landrace, Large White, Duroc Jersey and Middle White breeds. It was noted that 57% of farrowings occurred at night, while 43% occurred during daytime. Farrowing time ranged from one hr and 15 min to 7 hrs and 20 min. The sex ratio was 53.3% males to 46.7% females. The average number of teats among the sows studied was 12; sows with more teats usually had bigger litters.

636.4.083(043)

Swine, Effect of iron on.

261. A study on the effects of three injectable commercial iron preparation on the rate of growth and hemoglobin levels of suckling pigs at the Ilocos Norte Institute of Technology. Ramon R. Franco. Victoneta Park, Malabon, Rizal, Institute of Graduate Studies and Applied Research, Araneta University Foundation, June 1971. x, 58p. graphs, tables, illus. 21 refs. (Thesis. M. S. in Animal Husbandry, Major in Swine Husbandry)

Feraject, Jectran and Pigdex prevented nutritional anemia, promoted faster growth rate and higher weight gains, and gave resistance to infection in suckling pigs. Jectran promoted the highest mean weight and hemoglobin level.

636.4.085

Swine - Feeding - Experiments.

262. Plane of nutrition. IV. Effects of energy and protein on ovulation rates, embryo survival, and chemical composition of fetus during sow pregnancy. M. G. Supnet and J. A. Eusebio (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, Aug.-Sept. 1971, v.55, nos.3-4, p.153-160. tables. 10 refs.

The study was conducted on 36 crossbred Berkshire Landrace x Duroc Jersey and purebred Duroc Jersey gilts and sows. Results showed that gilts and sows fed high energy ration shed more ova than those receiving low energy diet, although embryo survival was lower. Sows on high energy diet with plant protein feed supplement had heavier embryos at 60 and 90 days ges-

tation than those on diet with animal supplement. Protein, fat, calcium and phosphorus depositions in the fetus were increased in high energy diet than in the low energy. Also, protein, fat and calcium depositions in the fetus were higher for the soybean-supplemented diet than with fish meal. However, the phosphorus deposition in the fetus due to protein sources did not differ significantly.

636.4.088

Swine - Carcasses.

263. Meat animal and carcass evaluation. III. Intercorrelations of weights of wholesale cuts of pork and selected carcass measurements. V. G. Arganosa and P. I. Ibarra (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, Aug.-Sept. 1971, v.55, nos.3-4, p.161-169. tables. 12 refs.

Twenty-eight barrows and 54 gilts averaging 88.6 ± 0.13 kg slaughter weight were used in the study. Zero and first order partial correlations within sex were computed to find out the relationships of weights of wholesale cuts of pork and selected carcass measurements. Backfat thickness was found to be significantly correlated with most of the wholesale cuts, while the loin eye area was significantly correlated with ham and loin cuts. Carcass length showed no correlation with any of the wholesale cuts.

636.4.088

Swine - Carcasses.

264. Meat animal and carcass evaluation: IV. Carcass and lean cut yields based on actual slaughter weight and weight adjusted for fill of gut. V. G. Arganosa, M. B. de Ramos and P. F. Alcantara (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, Aug.-Sept. 1971, v.55, nos.3-4, p.170-177. tables. 2 refs.

The study was conducted on 68 barrows and 111 gilts with an average slaughter weight of 86.15 kg. Using the computed adjustment factor of 10.02%, the adjusted slaughter weight was found to be 86.17. The carcass and lean cut yields based on both the actual slaughter and adjusted weights were found essentially the same.

636.5:591.11(043)

Bleeding - Poultry. Transamin.

265. A preliminary study on the effect of Transamin on the bleeding time of chickens. Carmen-cita V. Yason. Quezon City, College of Veterinary Medicine, University of the Philippines, July 1971. 4 ℓ . 24p. 2 ℓ . graph, table. 28 refs. (Thesis. Doctor of Veterinary Medicine)

Observations were made on 30 apparently healthy 70-day-old broiler chickens in which bleeding time was determined by the Duke's method. It was found that Transamin capsules given at a low dose of one capsule a day significantly shortened bleeding time from 119.98 to 65.56 sec. No side effects were noted. It was concluded that Transamin could be used as a hemostatic agent in chicken.

636.5.085

Poultry - Feeding - Experiments.

266. The effects of feeding high levels of ipil-ipil (*Leucaena leucocephala* Lam de wit) leaf meal and PMS administration on comb and ovary of ready-to-lay pullets. J. P. Mateo and M. H. Labadan (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, Aug.-Sept. 1971, v.55, nos.3-4, p.190-196. tables. 10 refs.

Observations were made on 120 S. C. White Leghorn pullets given a diet containing 30% ipil-ipil leaf meal and those injected with pregnant mare serum (PMS). It was noted that ipil-ipil leaf meal depressed significantly comb development but not the development of the ovary; PMS hastened the development of both the comb and ovary.

636.5.085

Poultry - Feeding - Experiments.

267. Influence of water-treated grain sorghum on the growth and feed conversion of broilers. Angel A. Esteban and Salvador P. Neric. *CLSU Scientific Journal*, July-Dec. 1971, v.7, no.2, p.187-196. tables. 9 refs.

Results of the experiment indicated that birds fed with corn ration produced significantly better weight gains than birds fed with untreated sorghum ration. No significant differences occurred between the groups fed with water treated grain sorghum and the corn ration. Similarly, there was no difference observed in feed consumption and feed conversion in all treated groups. Mortality was lowest in the group fed with corn. - Authors' Abstract

636.5.085

Poultry - Feeding - Experiments.

268. Shrimp meal as animal protein source for broiler chicks. J. C. Flor Cruz, A. S. Alejar, M. M. Labadan and J. P. Mateo. *Animal Husbandry and Agricultural Journal*, Sept. 1971, v.6, no.9, p.10-11. tables. 6 refs.

The study was conducted on 160 one-day-old broiler chicks given rations containing 8% and 15% shrimp meal. Results showed that shrimp meal can be a good substitute for fish meal as animal protein source in terms of weight gain, feed consumption and feed efficiency. No mortality was noted in the series.

636.5.085

Poultry - Feeding - Experiments.

269. Study on different levels of chicken manure mixed with commercial feed in broiler production. Eleuterio A. Corpuz and Emmanuel M. Cruz. *CLSU Scientific Journal*, Jan.-June 1971, v.7, no.1, p.102-109. tables. 8 refs.

The study was conducted on 200 one-day-old Pilch type chicks. Results showed that 5% chicken manure in feeds promoted faster growth rate and higher feed conversion efficiency than feeds with 10% or 20% chicken manure. Also, in general chicks given feeds with chicken manure were fully feathered at 8 wks old, and had higher degree of pigmentation than chicks fed with commercial feed alone.

636.5.085:637.451

Poultry - Egg production.

270. Delayed laying means bigger eggs. Javier P. Mateo. *Better Poultry and Livestock*, May 1971, v.12, no.9, p.36-37.

Feeding experiments on 120 S.C. White Leghorn showed that 30% ipil-ipil leaf meal in the diet delayed the sexual maturity of the pullets resulting in improved egg production.

636.5.085:637.451

Poultry - Feeding - Experiments.
Eggs - Yolks.

271. Egg yolk pigmentation potency of the water-lily (*Eichornia grassipes*). Ignacio S. Pablo and Alcestis M. Guiang. *Philippine Educational Forum*, Aug. 1971, v.20, no.2, p.33-44. graphs, tables. 7 refs.

Experiments conducted on 18 one-yr-old S. C. White Leghorn layers showed that addition of 5% water-lily to rations containing either 3% or 5% ipil-ipil enhanced color intensification of

egg yolk. The increase in color intensity is due to the increased amount of xanthophylls supplied by the feed. The pigmentation produced on egg yolk is marketably acceptable.

636.5.089

Poultry - Diseases and pests - Therapeutics.

272. Marek's disease. *Animal Husbandry and Agricultural Journal*, May 1971, v.6, no.5, p.11, 30.

The disease is caused by herpesvirus belonging to the DNA family of viruses. Infection occurs 6-15 wks prior to onset of first symptoms. The disease is acutely felt in breeder as well as layer farms causing 20-70% mortality. Vaccination of day-old chicks with Deptavac-HVT has been found 90-95% effective in controlling the disease. The vaccine has also proved effective in reducing mortality due to other diseases by 28-50%.

637.17:636.293:576.895.132

Milk, Buffaloes. Nematodes.

273. *Neoscaris vitulorum* larvae in milk of Murrah buffalo. Mario S. Tongson (College of Veterinary Medicine, University of the Philippines, Quezon City). *Philippine Journal of Veterinary Medicine*, June 1971, v.10, no.1, p.60-64. table, illus. 7 refs.

The larva of *Neoscaris vitulorum* recovered from Murrah buffalo milk is briefly described.

637.352:637.32

Cottage cheese - Bacteriology.

274. Microbiological appraisal of local cottage cheese. Jane S. Karganilla, Isabel C. Abdon, Milagros D. Gopez and Leonarda M. Pilac. *Philippine Journal of Nutrition*, July-Sept. 1971, v.24, no.3, p.179-188. tables. 18 refs.

Microbiological and chemical analyses of 69 cheese samples gave the following results: pH, 4.3-6.1; 1.8-6.0% NaCl; total plate count of from 221,125 colonies/g to too numerous to count; and yeast and mold count of from 150 colonies/g to too numerous to count. 30 samples were found positive for *Staphylococci*, 17 for *E. coli*, 40 for *Streptococci* and 39 for *Salmonella-shigella*.

637.525

Ham.

275. Techniques for better ham manufacture. *Animal Husbandry and Agricultural Journal*, Sept. 1971, v.6, no.9, p.16, 18. tables.

Briefly discussed are the following methods of curing ham, namely dry cover, pickle, pickle and dry cover, and artery pump. About 5-8 days/kg of pork should be allotted to enable the curing ingredients to penetrate into the tissues in addition to the aging time necessary for the ham to develop the desirable flavor after curing. Refrigeration is necessary to prevent spoilage during curing. The right quality pork and the proper blending and application of the curing ingredients should be considered.

FISHERIES

639.2.081.1:608.3

Fishing device. Patents and inventions.

276. Automatic fish catcher. *Science & Invention Digest*, Oct. 1971, v.1, no.3, p.12-13. illus.

The new fishing device, invented by Pascual S. Paz, was awarded Philippine Patent No. UM-824, Sept. 29, 1971. The device which looks like a mouse trap, reacts to the pull on the hook by jerking the line up. A sure catch is guaranteed with the slightest nibble on the hook. Rubber bands are used to activate the device, and increasing the number of rubber bands will vary the strength of the jerk.

639.21.03

Fish culture.

277. Fish pens in Taal Lake. Pablo M. Ariola and Justo R. Montemayor. *Fisheries Newsletter*, July-Dec. 1971, p.18-22. illus.

Fish pens in Taal Lake were patterned after those fish pens in Sampaloc Lake (San Pablo City) with a measurement of 100 x 25 m and with a wire mesh fence. However, the pens were improved by using nylon nettings instead of wire mesh. The pens were found to be a cheap and feasible method of fish culture in freshwater areas.

The construction and management of fish pens are briefly discussed.

MARINE HUSBANDRY

639.64:576.8.093 582.26:576.8.093
Agar.

278. Purification of local agar (gulaman) for microbiological use. Remedios Maranan, Asuncion Karganilla and Romeo Alicbusan (College of Agriculture, University of the Philippines, College, Laguna). *Philippine Agriculturist*, June-July 1971, v.55, nos.1-2, p.1-10. tables, illus. 6 refs.

Local agar, purified by the process of sedimentation, dialization and drying, was found useful in routine microbiological work but not for critical research. Local agar, whether purified or unpurified, as a solidifying medium in culturing microorganisms favors the growth of only some species unlike Difco agar which favors the growth of all species of microorganisms.

CHEMICAL AND ALLIED INDUSTRIES

66.0:634.616
Coconut research.

279. Nutrition and biochemistry of the coconut. Antonio S. Samson (Ateneo de Manila University, Quezon City). *Chemists' Quarterly*, June 1971, v.9, no.3, p.32-40.

Laboratory studies were conducted on shredded coconut meats to determine its potentiality as a new source of protein for human food use. Results showed that the meal obtained had protein content of 22.2%, 9.9% moisture upon equilibration, 1.1% oil, 5.1% ash and 7.5% crude fiber.

Different unit operations involved in both dry and wet processes in obtaining food grade coconut products are given.

661.73:634.0.8:66.061-954
Tannins.

280. Tannin extraction of Philippine tannin-bearing materials. III. Barks of red lauan (*Shorea negrosensis* Foxw.) Adelina Estrada-Manas (FORPRIDECOM, College, Laguna). *Philippine Lumberman*, Oct. 1971, v.17, no.10, p.34-38. graphs, tables. 3 refs.

The optimum conditions for extracting tannins from red lauan was found to be a 6-stage countercurrent method lasting one hr/stage at 60°C and a bark-to-water ratio of 1:12. About 72.2% tannin was obtained which gave a high Stiasny number indicating its suitability for adhesive formulation. The very low amount of

insoluble solids and high tannin content make it also ideal for tanning leather.

662.71
Wood distillation.

281. Destructive distillation of wood. N. B. Laxamana. College, Laguna, Forest Products Research & Industries Development Commission, Oct. 1971. 2p. table. 7 refs. (Technical note no. 110)

Carbonization experiments were conducted at FORPRIDECOM, College (Laguna) using African tulip (*Spathodea campunata* Beauv.), anilau (*Colona serratifolia* Cav.), tuai (*Bischofia javanica* Blume) and toog (*Combretodendron quadrialatum* Merr.). Distillation carried to a final temp. of 482°C for 7 hrs yielded 34.9-44.5% charcoal, 1.7-3.2% acetic acid, 1.1-2% methanol, 3.9-8.6% settled tar and 22.4-28.8% non-condensable gases.

664.15:663.1
Molasses. Yeasts.

282. Effect of pretreatment of molasses and recycling of yeast on ethanol fermentation. Ramon Samaniego and Ratan Lal Srivastava. *Sugar News*, July 1971, v.47, no.7, p.301-304, 311-318. tables. 30 refs.

Experiments showed significantly higher fermentation efficiencies for molasses treated with H_2SO_4 for the removal of Ca, and with C_2H_5OH and egg albumin for the removal of colloids. The recycling yeast washed with HCl resulted in higher efficiencies in all stages of recycling. However, observations on the behavior of recycling yeast in untreated and pretreated molasses wort showed that there was no significant difference in the yields of C_2H_5OH and fermentation efficiency in different stages of recycling, although recycling yeast in treated molasses wort maintained longer activity. The combined effect of pretreatment of molasses with H_2SO_4 and washing of yeast with HCl showed no significant difference in ethanol yield between pretreated and untreated molasses, except in the 3rd recycling.

664.4.002.2:66.047.3
Salt - Manufacture.

283. Proposed salt making process utilizing steam from geothermal hole in Tiwi, Albay. Erlinda U. de Luna (Commission on Volcanology, Quezon City). *COMVOL Letter*, July-Aug. 1971, v.5, no.4, p.1-4. diagr.

The proposed procedure for the manufacture

of salt from sea water using steam from the Tiwi Geothermal plant as the source of heat in concentrating the brine solution is described. Brine will be concentrated to 25°Be; the Mg in the resulting concentrated mother liquor may be recovered as $MgSO_4$.

666.2

Glass manufacture.

284. Varialite glass - its applications. Gerry Macias. *Philippine Inventors Bulletin*, Aug.-Sept. 1971, v.1, no.2, p.14-15, 29-30. illus.

The Varialite system utilizes the physical interactions between light, liquids and solids. It was developed on the concept that the total amount of light absorbed is a multiple of the total linear distance from the surface of departure of the transmitted light. The glass has 90% light transmissivity, is shatter-proof and it may be adjusted to change its color or its degree of darkening. The applications of Varialite on welding, building and architectural, smelting and steel industries, and photography are briefly discussed.

WOODWORK AND TIMBER INDUSTRY

674.03:620.16

Wood - Moisture content.

285. Moisture re-absorption of kiln-dried lumber in the FORPRIDECOM compound. M. G. Laxamana and G. Y. Tamayo, Jr. *Wood Preservation Report* (FORPRIDECOM, College, Laguna), May-June 1971, v.6, no.3, p.7-13. tables. 7 refs.

Experiments with tangile [*Shorea polysperma* (Blco.) Merr.] boards, plain- quarter-and bastard-sawn, were conducted to determine the increase in moisture, changes in dimension of bulk-piled lumber exposed indoors under atmospheric conditions and the response to moisture pickup. Results indicated that it took about 17 wks to attain an average moisture content (M.C.) of 10.4% from an initial M.C. of 5.5%. Solid piling of lumber absorbed the least amount of moisture. The increase in moisture and the changes in dimension of the plain-, quarter-and bastard-sawn specimens were the same. Of the one-in. thick specimens, those piled with stickers had the highest percentage shrinkage. The 2-in. tangile boards showed no significant difference in percentage shrinkage.

674.03:620.172(914)

Wood - Testing.

286. Relationship between modulus of rupture and modulus of elasticity of some Philippine timber. R. Z. dela Cruz, R. J. Miciano and J. O. Siopongco (FORPRIDECOM, College, Laguna). *Philippine Lumberman*, April 1971, v.17, no.4, p.28-29. graph, table. 12 refs.

A regression equation which can be used in predicting the strength of Philippine structural timbers irrespective of species or moisture content is presented. The equation is based on the linear relationship between the modulus of rupture (MOR) and modulus of elasticity (MOE) of 15 Philippine timber species. MOE accounted for 63.61% of the total variation in MOR. A lower 99% confidence limit was defined to allow for the variability of the material.

674.03:620.19(914)

Wood - Testing.

287. Corrosiveness of Philippine commercial timbers on metals. II. Six species. Adelina Estrada-Manas (FORPRIDECOM, College, Laguna). *Philippine Architecture, Engineering & Construction Record*, May 1971, v.18, no.2, p.18, 20-22. graphs, tables. 10 refs.

The corrosiveness of narra (*Pterocarpus indicus* Willd.), red lauan (*Shorea negrosensis* Foxw), tangile [*Shorea polysperma* (Blanco) Merr.], toog [*Combretodendron quadrialatum* (Merr.) Merr.], white lauan [*Pentacme contorta* (Vid.) Merr. & Rolfe] and yakal-gisok (*Shorea gisok* Foxw.) were determined using common iron nails. Results showed that tangile and toog are the most corrosive, while narra and white lauan the least corrosive. The corrosive properties of the species were found not directly correlated to their reference pH values.

674.03.04

Wood - Decay resistance.

288. Effect of prolonged heating on the decay resistance of tangile [*Shorea polysperma* (Blco.) Merr.]. Mario A. Eusebio. *Wood Preservation Report* (Forest Products Research & Industries Development Commission, College, Laguna), May-June 1971, v.6, no.3, p.1-6. graph, tables. 8 refs.

Dry heating at temp. ranging from 80° to 175°C for 240 hrs darkened the color of tangile from reddish brown to chocolate brown. Except for specimens heated at 100°C, all the other heated specimens showed marked increase in decay resistance against white-rot fungus, *Fomes livi-*

du (Kalchbr.) Sacc. and the brown-rot fungus, *Lenzites striata* (Swartz ex Fries) Fries. The decrease in decay resistance at 100°C may be due to the partial hydrolysis of carbohydrates in wood rendering the carbohydrates easier for the fungi to assimilate. The study indicates that "sub-char pyrolysis" is a promising process of wood preservation.

674.03.04

Wood - Drying.

289. Study on the effect of presteaming on the drying rates and qualities of 5/4-inch thick apitong (*Dipterocarpus grandiflorus* Blanco). Ricardo F. Casin. *Wood Preservation Report* (Forest Products Research & Industries Development Commission, College, Laguna), Sept.-Oct. 1971, v.6, no.5, p.1-9. graphs, table. 14 refs.

Presteamming of apitong boards for 2, 4 and 6 hrs at 212°F saturated condition had no appreciable effect on the drying rates of the board. However, the boards presteamed for 4 and 6 hrs had greater shrinkage values than those presteamed for 2 hrs. Drying time was reduced to about 1.5-2 days. Moisture gradients were less steep and shrinkage values of steamed boards were greater than those of the unsteamed boards.

674.03.04

Wood - Drying.

290. Study on the performance of an automated electronically controlled lumber dry kiln. Melencio G. Laxamana. *Wood Preservation Report* (Forest Products Research & Industries Development Commission, College, Laguna), July-Aug. 1971, v.6, no.4, p.1-6. tables, illus. 4 refs.

Two Philippine mahogany species, *Shorea agsaboensis* Stern (tiaong) and *Shorea polysperma* (Blanco) Merr. (tangile) were kiln-dried in a fully automated electronic controlled lumber dryer. The drying time of one-in. green tiaong with 62.4-78% moisture content (MC) to an average MC of 10% was 1.5-2.5 days. Tangile with an initial MC of 52.1% attained an average MC of 8.1% in about 4 days. Except for severe casehardening and slight to moderate warping in some boards, drying was considered satisfactory in both species. An initial temp. of 60°-70°C and an equilibrium MC of 16% were found safe for both species.

TEXTILE INDUSTRIES

677.162:66.014

Fibers - Analysis.

291. The proximate chemical composition of some Agave and Furcraea fibers. E. U. Escolano, P. C. Francia, J. A. Semana and L. A. Ynalvez (FORPRIDECOM, College, Laguna). *Philippine Lumberman*, Sept. 1971, v.17, no.9, p.21, 24, 61. tables. 12 refs.

Chemical analyses of the fibers of 5 Agave and one Furcraea species revealed that these materials have low ash and lignin contents, alcohol-benzene and hot-water solubles, but high holo-cellulose and alpha-cellulose contents. Results indicated that these fibers are potentially valuable raw materials for chemical pulp.

BUILDING INDUSTRY

691.12

Bamboos.

292. Some properties and uses of bamboos. Z. B. Espiloy (FORPRIDECOM, College, Laguna). College, Laguna, Forest Products Research & Industries Development Commission, Sept. 1971. 2p. 12 refs. (Technical note no. 109)

Recent studies in the Philippines showed that bamboos can be used for beams and columns; a 30-cm circumference bamboo when loaded at center with a span of 5 ft can support 0.5 ton, and when used as post or columns about 4 ft high, it can support 4 tons. Bamboos have also been found suitable for pulp and papermaking. A 3-4-yr-old erect-bamboo species can yield 2.4-2.8 tons pulp. FORPRIDECOM has developed a bamboo-wood tile. The wearing characteristics of the bamboo face are comparable to those of wooden tiles of similar construction.

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NOTE: Listed hereunder are the publications from which pertinent articles are abstracted in this issue.

A. PERIODICALS

Acta Medica Philippina
Agriculture at Los Baños
Animal Husbandry and Agricultural Journal
Araneta Journal of Agriculture
Better Poultry and Livestock
Bureau of Forestry
Occasional Paper
Bureau of Mines
Report of Investigation
CLSU Scientific Journal
CMU Journal of Science and Technology
COMVOL Letter
Chemists' Quarterly
Filipino Family Physician
Fisheries Newsletter
Forest Products Research & Industries
Development Commission
Technical Note
Wood Preservation Report
Forests and Farms
IRRI Reporter
Journal of the Philippine Medical Association
Journal of the Philippine Medical Women's Association
Mineral Engineering Magazine
Nucleus
Philippine Agriculturist
Philippine Architecture, Engineering & Construction Record
Philippine Educational Forum
Philippine Geographical Journal
Philippine Inventors Bulletin

Philippine Journal of Home Economics
Philippine Journal of Nutrition
Philippine Journal of Pediatrics
Philippine Journal of Plant Industry
Philippine Journal of Veterinary Medicine
Philippine Lumberman
Philippine Mining Record
Philippine Scientist
Philippine Statistician
Reforestation Monthly
Santo Tomas Journal of Medicine
Science and Invention Digest
Sugar News
Sugarland
Weather Bureau
Technical Series

B. OTHER DOCUMENTS

Papers:

3rd Symposium on Mineral Resources Development and the 18th Mine Safety Conference, Nov. 29-30 1971, Manila

Theses:

Adamson University
Graduate School
Araneta University Foundation
Institute of Graduate Studies and Applied Research
University of San Carlos
Graduate School
University of the Philippines
College of Veterinary Medicine
University of the Philippines
Graduate School

